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**Voter Preferences and Redistributive Policy: Exploratory
Analysis Based on a Comprehensive Dataset on Preferences**

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ABSTRACT:

This paper presents a new dataset that harmonizes and integrates survey data spanning more than 50 countries over four decades to measure preferences for redistribution by income groups via group-level latent variable models. For OECD countries included in that dataset, we explore the effects of group-level preferences on three policy outcomes: welfare-state generosity, social spending in percent of GDP and redistribution via taxes and transfers. We find some evidence that policy responds less to the preferences of poor citizens than to middle-income and affluent citizens, but we do not find any evidence of a systematic bias in favor of affluent citizens relative to middle-income citizens (or vice-versa). The lack of overall policy responsiveness to public preferences measured in this manner is the most striking finding that emerges from our exploratory analysis.

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1. Introduction

A growing body of literature demonstrates how government policy in different policy areas tends to be more responsive to the preferences of affluent citizens than to the preferences of low-income citizens and that this holds not only for the US (Bartels 2008; Gilens 2012; Hayes 2013; Rigby and Wright 2013; Gilens and Page 2014) but also for many other liberal democracies, including countries with a more equal distribution of disposable income (Donnelly and Lefkofridi 2014; Peters and Ensink 2015; Bartels 2017; Elsässer et al. 2018; Persson and Gilljam 2018). Yet, the growing literature has also produced skepticism as to whether this unequal representation is real and whether the more affluent indeed ultimately see policy aligning with their preference more often than other groups (Soroka and Wlezien 2008; Enns 2015; Branham et al. 2017). Notably, even within the (admittedly large) policy domain of redistributive politics, the cross-country comparative literature has produced conflicting findings. While Peters and Ensink (2015) and Schakel et al. (2020) combine different cross-country surveys with data on social spending and welfare generosity to show that welfare policy around the world is more responsive to the interests of the more affluent (see also Bartels 2017), Elkjær and Iversen (2020) combine ISSP survey data with social expenditure data from the OECD to argue and show that in the long run, it is the middle class that is primarily being catered to in social spending policy.¹ Yet other studies conclude that adjudicating between the responsiveness to different income groups is difficult in the realm of redistributive policy (Donnelly and Lefkofridi 2014)

Against this conflicting state of findings in the literature, this paper seeks to enhance our understanding of the relative influence of different income groups in redistributive policy-making and policy outcomes across the world. In particular, we seek to advance the literature in two ways. First, to enlarge the scope of previous studies of unequal responsiveness, we have harmonized and integrated survey data spanning more than 50 countries and four decades to measure preferences for redistribution by income groups via group-level latent variable models. In these models, we distinguish three equally sized income groups: the low-, middle- and high-income terciles or, for short, L, M and H that ultimately make up the electorate and for which we have clear expectations regarding responsiveness in an idealized “equal” or “unbiased” democracy. Second, we combine this preference data with

¹They attribute findings that high-income interests dominate policy-making to short-term fluctuations in policy (i.e. policy changes), whereas in the long run, policy levels are responsive to the interest of middle-class voters (see below).

high-quality data on redistributive policy ranging from policy output as in Schakel et al. (2020) over spending patterns as intermediate policy outcomes as in Peters and Ensink (2015) and Elkjær and Iversen (2020) to redistributive outcomes capturing inequality and redistribution more generally (Donnelly and Lefkofridi 2014), thereby undertaking a more comprehensive answer to the question of “Who gets what, when and how?” (Laswell 1936) when it comes to redistribution.

2. Theoretical Background

As mentioned above, we have reason to believe that policy-makers across the globe are more responsive to the interests of more affluent groups in society compared to the interests of lower- and potentially middle-income citizens. Research in the US (most prominently Bartels 2008; Gilens 2012; Gilens and Page 2014) has used survey-based measures of broad ideological orientations by income as well as specific positions on policy issues to demonstrate this type of inequality in representation in the voting behavior of legislators, as well as eventual policy outputs. While earlier research has mainly analyzed state-level representation (Bartels 2008; Flavin 2012; Hayes 2013; Rigby and Wright 2013) or the national level (Gilens 2012), newer research by Tausanovitch (2016) and Becher and Stegmueller (2021) uses high-quality district-level data on voter preferences with regard to specific policies to show how US House members are on average more responsive to the interests of their high-income constituents. Other authors have used designs similar to Gilens (2012) to establish inequality in representation in countries such as Germany (Elsässer et al. 2018), Switzerland (Stadelmann et al. 2015), the Netherlands (Schakel 2019) or Sweden (Persson and Gilljam 2018), with similar conclusions drawn despite the vastly different political contexts compared to the US. Finally, some authors have taken up a comparative perspective to assess unequal responsiveness across different countries (Donnelly and Lefkofridi 2014; Peters and Ensink 2015; Bartels 2017). Drawing on these findings and focusing on the domain of redistributive politics, we postulate:

*H*₁: Redistributive policy outputs and outcomes respond more strongly to the interests of high-income citizens compared to low-income citizens.

We here distinguish between policy outputs and policy outcomes to reflect the dependent variables used in our analysis below. More fundamentally, however, this distinction allows for a more comprehensive understanding of the relevance of

inequalities in representation. While for instance the generosity of the welfare state measured using among other indicators income replacement rates or coverage rates of social insurance as analyzed by Schakel et al. (2020) is under relatively direct control of policy-makers, the same is not necessarily true for policy outcomes. For instance, spending on redistributive policies such as unemployment and active labor-market programs analyzed by Peters and Ensink (2015) and Elkjær and Iversen (2020) under any given welfare regime is on the one hand crucial to understand actual redistribution. On the other hand, it also depends on the macro-economic situation as it rises and falls somewhat mechanistically in response to unemployment and macro-economic shocks. Thus, controlling for such “automatic stabilizers” (Bartels 2017) is of great importance in the analyses conducted below (see also Pontusson and Weisstanner 2018: 36). Yet, spending levels alone also represent only an incomplete account of redistributive policy-making and thus also redistributive outcomes. Not only does the extent to which social spending is targeted towards lower incomes and hence the degree of redistribution resulting from similar spending levels vary across countries (Beramendi and Rehm 2016), but governments might also use the domain of tax policy to achieve a more equal distribution of incomes (Milanovic 2000). Thus, by additionally focusing on summary measures of redistribution that compare the income distribution before and after taxes and transfers (see below), we gain a summary measure of the different policies states might adopt to make the distribution of income more (or less) equal. In addition, by focusing on outcomes that individuals should ultimately care about – thus accounting for the notion that individuals do not care about expenditure in itself as stressed by Schakel et al. (2020) based on Esping-Andersen (1990) – we also implicitly account for the various constraints policy-makers face, be it in terms of direct constraints such as the budget (Tober and Busemeyer 2019) or in terms of more general limitations in changing or correcting market outcomes.

As mentioned above, we focus on redistributive politics as it is not only a relatively salient issue in most political systems, but because it is an issue where citizen preferences have long been theorized to be a more or less direct function of one’s position in the income distribution that is in turn directly affected by changes to redistributive policies (Meltzer and Richard 1981; Iversen and Soskice 2006). Hence, we can expect meaningful and systematic variation of preferences by income, which is not necessarily true for other issue domains, but which is a pre-condition of inequality in representation (Soroka and Wlezien 2008). As commonly noted, unequal representation by income obviously presupposes that preferences differ significantly

across income groups (Soroka and Wlezien 2008; Gilens 2012; Gilens and Page 2014; Branham et al. 2017). Even if policy-makers were to disproportionately respond to the preferences of the affluent, as long as these preferences are an almost perfect proxy of the preferences of the entire electorate, low-income individuals might be very well represented by “coincidence” (Enns 2015).

In our hypothesis, we are agnostic about the determinants of the proposed unequal representation. Scholars studying the US focusing on the resources and mobilization potential of different groups have argued that the ability to donate to candidates, especially in the absence of strict campaign finance regulations (Ellis 2012; Flavin 2015; Leighley and Oser 2018) serves as a pathway for the more affluent to gain disproportionate access. Other contributions see disparities in electoral and non-electoral participation between high- and low-income groups as a reason for the preferences of the former being more accessible to legislators and ultimately more relevant for their re-election (Franko et al. 2016; Peters and Ensink 2015). Also, the declining rates at which legislators or members of government have lower-class backgrounds (Alexiadou 2019; Carnes 2013; Carnes and Lupu 2015) – i.e. an increase in descriptive misrepresentation – might ultimately also lead to substantial policy misrepresentation if legislators are motivated by their own preferences or if the problems and preferences of less affluent citizens are less easily accessible to them.² The extent to which these different mechanisms apply in different polities might vary, but together with the growing body of literature demonstrating inequalities in representation within quite different political systems leads us to believe in a somewhat universal pattern of unequal representation favoring more affluent parts of the income distribution.

An important distinction not made explicitly in the formulation of the above hypothesis touches upon the type of representation that is being invoked. In particular, it is unclear whether we refer to policy outcomes in an absolute sense (e.g., a given level of spending) or relative to the status quo (e.g., changes in spending). These distinctions ultimately affect not only the formulation of statistical models, but our understanding of policy representation more generally. Both types have previously been used in the literature. While Peters and Ensink (2015) use levels of spending, Bartels (2017) and Schakel et al. (2020) base their discussion on changes in spending and welfare state generosity levels respectively. Elkjær and Iversen (2020) in turn argue in their analysis of social spending levels that a focus on changes in spending

²See also Broockman and Skovron (2018), who demonstrate a pervasive perceptual bias of US legislators towards the conservative parts of their constituencies.

produces misleading results that seemingly indicate a dominance of individuals with higher incomes. Namely, they argue that the short-run spending preferences of higher-income citizens are more closely aligned with the Neo-Keynesian policy proposals of macro-economic policy-makers in response to the state of the economy, whereas those with lower incomes more often tend to adopt a “household” view on spending, thus embracing pro-cyclical spending. Therefore, short-term changes in spending will be more closely aligned with (changes in) the short-term preferences of the more affluent. Yet, in terms of absolute levels of spending - which due to the slow-moving nature of politics also represent the long-run - policy is argued and shown to respond to and reflect the preferences of the middle class, consistent with canonical models of redistribution (Meltzer and Richard 1981; Iversen and Soskice 2006).³

We think that linking findings and theories about the feedback from policy and the macro-economy to preferences (cf. Gingrich and Ansell 2012; Wlezien 1995; Soroka and Wlezien 2005; Kelly and Enns 2010) and their implications for empirical models of redistribution as done by Elkjær and Iversen (2020) is important. Yet, we disagree with their focus on long-run levels of spending for several reasons. First, citizens and policy-makers alike are constrained by the status quo. For any given legislator or government, changing policies requires effort and resources. Moreover, checks and balances in their various forms force legislators to cooperate and compromise in crafting policies, especially in a policy area where the livelihood of some citizens crucially depends on policies. Finally, any policy changes eventually adopted likely take time to materialize, often stretching beyond the time horizon of policy-makers that are at least partly motivated by staying in office come election day. Thus, not only can changes in policies be expected to occur at the margin (i.e. the setting of policy instruments such as wage replacement levels) rather than as a complete revamp of any given policy domain, but they will also have unfolded a limited impact when

³Note that two caveats apply to their arguments. First, and rather curiously, the assumption that economic policy-makers and those with higher incomes share preferences (higher congruence) and therefore policy ultimately ends up where it would have if higher-income groups made policy directly does seemingly not constitute representation or responsiveness to them, despite electoral turnover that results in having like-minded politicians taking office being a key mechanism of representation (Griffin and Newman 2005). Second, their objections are based on theoretical arguments pertaining to spending, whereas the literature linking specific policies (i.e. individual bills) to suitable survey items gauging preferences for them (Gilens 2012; Elsässer et al. 2018; Persson and Gilljam 2018; Schakel et al. 2020; Becher and Stegmueller 2021; Stadelmann et al. 2015) are not limited to decisions about spending, but to political representation in policy domains across the board. Finally, Kelly and Enns (2010: 865f) have shown that while the broad policy preferences of the US electorate indeed respond to macro-economic changes, the responses are remarkably similar across income groups.

time comes for citizens to step to the ballot box. For this reason, dynamic models of representation (Stimson et al. 1995) as well as the famous “thermostatic” model of representation (Wlezien 1995) both stress the incremental and change-focused nature of political representation (cf. also Kelly 2005: 873f).

Citizens on the other hand, can also be assumed to be focused on the status quo and likely or unlikely incremental deviations from it. The model of party competition of Grofman (1985) already incorporates the notion that rational voters understand legislators’ limited (but potentially varying) ability to change the status quo and explicitly account for it in their voting decisions. Thus, they conceive of politics as a struggle to pull the status quo more or less in any direction. Correspondingly, changes in spending have been shown predict subsequent changes in spending preferences as predicted by the “thermostatic” model of representation (Wlezien 1995; Soroka and Wlezien 2005). Moreover, as argued and shown by Gingrich and Ansell (2012) given that institutional regimes in the domain of redistributive policies such as health insurance, pension systems and unemployment insurance affect the everyday livelihood of citizens as well as the different labor market and life risks they are facing, the status quo of redistributive policy can serve as a substantial anchor to preferences, a perspective that is also consistent with boundedly rational citizens engaging in “satisficing” (Simon 1955; Simon 1956) rather than displaying full-information rationality with regard to the numerous policy alternatives in redistributive politics. Thus, our preferred specifications capture the change in policy as a function of citizen preferences. Naturally, the question of examining change as opposed to levels of policies is ultimately an empirical one that also depends on the types of variables used to gauge citizen preferences, an issue discussed and accounted for by Elkjær and Iversen (2020) and revisited below. Thus, we estimate our empirical statistical models below using both, specification capturing policy changes, as well as specifications capturing policy levels.

3. Our approach

Based on the theoretical discussion above, we model redistributive policy outputs and outcomes as a function of the preferences of different income groups. As mentioned above, redistributive outcomes are unlikely to change radically from one year to another. We thus expect differences between countries to outweigh the incremental changes within countries by far. Consistent with this “stickiness” of policy and the expected lag with which policy changes affect policy outcomes, we rely on the

following basic model specification to explain how redistributive outcomes r (as measured using welfare generosity indices, Gini coefficients and social spending, see below) in country $i = 1, \dots, I$ change from year $t = 1, \dots, T$ to $t + 2$:

$$\Delta r_{it} = r_{it+2} - r_{it} = \alpha_0 + \beta_h p_{hit} + \beta_m p_{mit} + \beta_l p_{lit} + \rho_{r_{it}} + x_{it}\gamma + \Delta x_{it}\lambda + \epsilon_{it}$$

In the above model that partially mirrors an error correction type of model (De Boef and Keele 2008: 190), p_{hit} , p_{mit} and p_{lit} denote the redistribution preference level of the more affluent, the middle-income group and the lower income citizens in a given country i in year t as measured using cross-country comparative survey series (see below). Hence, we model the degree to which redistributive outcomes r change over a span of two years as a function of measured preference levels.⁴

In this model, we control for a range of potential confounders x_{it} that affect redistributive outcomes and could also simultaneously affect preferences. These are broad-economic conditions meant to capture the state of the economy that also include so-called “automatic stabilizers” (Bartels 2017) like unemployment that have a rather mechanistic effect on redistributive policies (see below). In addition, and as mentioned above, broad economic conditions have been argued to affect the preferences lower-income citizens and higher-income citizens in different fashions. If more affluent citizens generally show more anti-cyclic or Keynesian preferences compared to less affluent citizens and countries generally followed Keynesian policy (but not necessarily as a response to high-income preferences) as argued by Elkjær and Iversen (2020) (see however Kelly and Enns 2010: 865f.), a spurious relationship between preferences of the affluent and policy responses would arise. Conversely, their theoretical arguments imply that controlling for the macro-economic situation (which jointly predicts preferences and policy-response), there are no further differences in the relationship between the preferences of the affluent compared to the remaining electorate. We include the levels of these covariates as well as their changes over two years to capture movements in policy outcomes unrelated to changes in preferences or responsiveness. In sum, by controlling for mechanistic or automatic responses to macro-economic conditions in both policy and possibly also preferences, we seek to capture the residual amount of policy responsiveness to different income groups.

⁴Note that it would be desirable to include changes in preferences alongside their levels to arrive at a complete error-correction specification that distinguishes long-term and short-term impacts of preferences, this is not easily possible in our application. The “time series” of preferences that we estimate below have many gaps, as the countries in our analysis are typically observed every second to third year only or feature even longer periods without a preference measure available.

In addition to these substantial variables, all models include period dummies for different decades. Doing so is important to guard against potential shocks that affect all countries simultaneously in terms of redistributive outcomes but might affect only a certain income group in terms of their preferences. To enhance interpretation, our empirical models below use mean-centered and standardized versions of all non-binary covariates. Furthermore, all reported results use panel-clustered standard errors robust to heteroscedasticity and serial correlation (Arellano 1987). The models are estimated in R via the `plm`-package (Croissant and Millo 2008; Millo 2017).

In addition to this baseline-specification, we also report models that capture redistributive outcomes r_{it+2} in levels rather than changes and that include country-fixed effects, a model closer to the preferred specification of Elkjær and Iversen (2020). These models drop lagged levels of the dependent variable. We again use the two-year lead of our dependent variable to account for the slow-moving nature of redistributive policies. The models with country-fixed effects capture time-stable omitted variables that might simultaneously influence the extent of redistribution r_{it+2} of a country for all years t and the preferences of the three income groups. By exploiting only the (potentially very low) within-country variation in the redistributive outcomes and citizen preferences by income group, these models feature a comparatively weaker exogeneity assumption. Namely, instead of having to assume that there are generally no unobserved confounders of the relationship between preferences and policy (changes), they assume that there are no omitted time-varying confounders that simultaneously influence citizens' preferences for redistribution and actual redistributive outcomes. Substantively, exploring models in levels vis-à-vis models in changes also allows us to explore whether the different models give substantively different answers, as suggested by Elkjær and Iversen (2020). Namely, their results suggest a (presumably spurious) over-representation of high incomes when (short-term) changes in spending are modeled, whereas models in levels generally suggest a dominance of middle-class interests in the long run.

An important aspect of the models is the specification of our preferred models with preferences for all three income groups and the definition of these groups. We include the preferences of all three groups in the income distribution, as not doing so might lead to an omitted variable bias. Suppose that legislators respond to the middle-income group alone (maybe because it contains the median voter, cf. Downs 1957; Iversen and Soskice 2006), but that the preferences of either the low- or high-income groups are on average more consistently aligned with the preferences of the

middle group i.e. a better proxy of them.⁵ Depending on the precise configuration, a model not including the preferences of all income groups as in some of the models presented by Schakel et al. (2020) (see also Peters and Ensink 2015) could thus falsely indicate the dominance of that group vis-à-vis the group that is less consistently aligned with a dominant, but omitted group (cf. Donnelly and Lefkofridi 2014: 21). Since we are not interested in the degree of such "coincidental representation" (Enns 2015), but rather in whose preferences actually count, including all three groups is crucial, even when the ultimate interest (as in H_1) lies in comparing the relative influence of high- versus low-income groups.⁶

Related, we assume that the different groups for which we measure preferences have the same size in the population, thus reflecting thirds of the income distribution and that the scale on which we measure preferences is the same for all income groups. Irrespective of the precise specification used, the expectation is thus that if there are no omitted confounders and the relative influence of the three income groups was the same (thus implying an "ideal" or "unbiased" democracy in which policy respond to all groups equally) that the three slope estimates for the income-group-specific preferences β_h , β_m , and β_l would be equal. Yet, given the established findings of unequal responsiveness (that we also expect here) in which legislators respond more to the preferences of the affluent compared to the preferences of the middle- and low-income groups would in contrast imply $\beta_h > \beta_l$ and potentially $\beta_h > \beta_m$. We are thus primarily interested in the relative sizes of β_h , β_m , and β_l . The absolute levels of these coefficients, in contrast, are of no particular interest, as redistributive outcomes r_{it} and preferences p_{hit}, p_{mit} and p_{lit} are not assumed to be measured on the same scale. Many studies of unequal representation follow the approach proposed by Gilens (2012) and use predicted preferences at the 50% income quantile as well as the 10% and the 90% quantile as the basis for determining the relative power of groups (Schakel et al. 2020; Elkjær and Iversen 2020; Elsässer et al. 2018; Persson and Gilljam 2018). In conjunction with the issue of omitted groups, doing so raises the question of the expected model results under a null hypothesis of equal representation. In particular, assume that predicted median preferences are generally more similar and more highly correlated with average preferences between the 10%

⁵Note that it here is the correlation of preferences between groups that matters, not their relative distance.

⁶That being said, including all three income groups cannot guard us against the type of coincidental representation described by Elkjær and Iversen (2020) in which more affluent individuals tend to agree with policy experts that are actually decisive in policy-making. Note however that across policy issues in the US, preferences of the affluent are not more systematically related to interest group preferences than for the average citizen Gilens and Page (2014: 571f.).

and the 90% income quantile than preferences at the 10% and 90% quantiles.⁷ In this scenario, median preferences will be representative or indicative of a much larger share of the electorate than preferences at the top and bottom ends of the income distribution. Correspondingly an estimated configuration with $\beta_h > \beta_m$ as shown in many of the aforementioned contributions would indeed indicate unequal responsiveness favoring higher incomes. Conversely, a pattern with $\beta_m > \beta_h$ alone is not sufficient to demonstrate the supremacy of the middle class suggested by Elkjær and Iversen (2020) as it would be expected even under equal representation. To avoid these problems, we follow Bartels (2017) and Becher and Stegmueller (2021) and seek to measure preferences for the bottom, middle and top income thirds in any given country and any given year.

An important point to note is that due policy-outcomes and outputs being on a different scale compared to the preference measure employed below, the β -slopes above represent the degree to which policy is responsive to the preferences of different groups, which does not necessarily imply that policy outputs or outcomes are congruent with citizens preferences, i.e. that this responsiveness leads to better representation (Lax and Phillips 2012; Lax et al. 2017; Simonovits et al. 2019).⁸ While we cannot easily measure redistributive outcomes and preferences on the same scale, we need to make sure that the measurements we use for redistribution and redistributive preferences match in terms of their content validity. In what follows, we rely on a broad notion of redistribution and assume that citizens do not care about individual policy instruments themselves, but rather about the extent to which

⁷In the data used by Elkjær and Iversen (2020), predicted preferences at the 10% and the 90% quantile on average correlate at .89 and .87 with the other deciles, whereas median preferences on average correlate at .95 with all other groups.

⁸A theoretically very attractive alternative to the described setup would measure preferences and policy outcomes on the same scale by using citizen support for specific policy proposals (binary or dichotomized) that can be compared to legislative votes on or policy adoption of the same proposals (Matusaka 2010; Gilens 2012; Lloren and Wüest 2016; Leighley and Oser 2018; Becher and Stegmueller 2021). However, specific policies are typically not debated simultaneously in many countries (unlike for instance national bills in the US House districts) and corresponding items are not included in cross-country comparative questions. Even if they were, the availability of citizen preferences and policy adoption/legislator votes does not automatically imply that congruence and thus the degree of representation in an absolute sense can be measured. Rather, since citizens are not generally knowledgeable about many policies (Lupia 2016) and survey item texts necessarily do not include full policy proposals, citizens' responses to such questions could easily be contaminated in a systematic fashion by subtle details of question text, directionality of the question and by response sets/biases induced by acquiescence or non-attitude (Beyer and Hänni 2018). Thus, the measurement of citizen-legislator or citizen-policy congruence is difficult to achieve even with supposedly well-suited data sets (see also Hill and Huber 2019). For the same reasons, counting "policy wins" by groups based on majority cutoffs (cf. Branham et al. 2017) could easily lead to biased measures of (equality of) representation if such response biases are present, even if the bias is equally pronounced across groups.

market outcomes and risks are compensated overall via redistribution and the cost associated with this. As a consequence, we rely on an inclusive measurement strategy to elicit group-level preferences relying on many different survey items and also use broad summary measures of redistributive policy outputs and outcomes as well.

4. Measuring Redistributive Politics

We rely on three different measures of redistributive policy as our dependent variables, covering direct policy outputs, intermediate policy outcomes and overall policy outcomes. These are presented here in turn.

4.1. Policy Output: Welfare State Generosity Index

To measure policy outputs, we follow Schakel et al. (2020) and rely on the Comparative Welfare State Entitlement database 2 (CWED, Scruggs 2014; Scruggs et al. 2017). This data set aggregates a host of different indicators of the generosity of the welfare state in the policy areas of sickness insurance, unemployment insurance and pension, such as coverage rates, wage replacement rates, qualification periods and so on. Moreover, these different indicators are aggregated to domain-specific as well as an overall welfare generosity index. Consistent with the notion of capturing redistributive policy broadly and with the fact that a large part of redistributive policy takes the form of social insurance (Iversen and Soskice 2001; Moene and Wallerstein 2001), we take the overall Welfare Generosity Index as our dependent variable. This also resonates with our broad measurement strategy for redistribution preferences, that unlike in Schakel et al. (2020) does not distinguish between different policy domains. Higher values indicate a more generous welfare state.

A disadvantage of the CWED is its somewhat limited coverage in comparison to our other dependent variables. While it includes 33 countries and most of the period following WWII, its coverage ends in 2011, thus effectively censoring our sample in 2009 due to the two-year lead required to compute changes of this variable as described above. Moreover, for a significant number of country-years, especially in Eastern Europe, only some of the indicators are available and the overall welfare generosity index is missing. An advantage of the CWED is the fact that it summarizes policy outputs, which should be under the most direct control of policy-makers and thus be a crucial component in responsiveness relationships running from public preferences to policy.

4.2. Intermediate Policy Outcome: Social Spending

The welfare generosity index described above heavily relies on the notion of social insurance to characterize the welfare state. Social insurance and wage replacement policies are indeed important elements of redistributive policy making (Iversen and Soskice 2001; Moene and Wallerstein 2001), especially when for instance unemployment risks are concentrated among lower-income groups (cf. Cusack et al. 2006; Rehm et al. 2012). Yet, redistributive policies may extend beyond policies of wage replacement. As a second dependent variable, we thus follow Elkjær and Iversen (2020) and use general government social spending as a share of GDP.⁹ This data is obtained from the OECD Social Expenditure database (OECD 2019), which covers 36 countries, starting in 1980. For countries and country-years not covered by the OECD, we supplement this data with data contained in the Comparative Political Data set (Armingeon et al. 2018), which is based on Eurostat's database of government expenditure by function of government. In comparison to the welfare generosity index employed above, this variable does not only have a better country-year coverage in conjunction with the survey data used to measure public preferences, but also incorporates policies not covered by it, i.e. policies that go beyond sickness insurance and wage replacement for the unemployed.

4.3. Final Policy Outcome: Total redistribution

As mentioned above, spending on social causes and transfers is but one way governments can achieve a more equal distribution of income, whose effect on the actual income distribution might vary with different spending schemes. To capture the overall effect of government action towards reducing inequality, we here rely on the OECD Income distribution database (IDD, OECD 2020), which provides different detailed indicators of income inequality and covers 44 countries, some starting as early as 1974. We here utilize the well-known GINI coefficients to assess (changes in) inequality. In particular, the IDD data contains Gini coefficients calculated for market income, i.e. income before taxes are collected and transfers are undertaken, as well as for the distribution of disposable income after taxes and transfers are applied. For any given country-year, the difference between the two represents the degree to which the entirety of government tax and transfers policies (intentionally or not) lead to less (or more) inequality. By assessing the overall effects of government policy on the income distribution as a whole, we can thus gain a very comprehensive

⁹We aggregate public and mandatory private social spending.

picture of government-driven redistribution and its impact (cf. Kelly 2005: 871f). Following Donnelly and Lefkofridi (2014), we use relative redistribution for each country-year as our third dependent variable:

$$r_{it} = \frac{100 * G_{market;it} - G_{disp;it}}{G_{market;it}}$$

where G denotes the Gini coefficient calculated for the respective definition. The resulting comprehensive measure of redistributive policy outcomes matches also matches most closely with inclusive measurement strategy for public opinion.

We use relative rather than absolute redistribution as the latter is more likely to be contaminated by changes in the macro-economic situation. In particular, the absolute extent of redistribution might increase markedly during economic downturns when increasing unemployment diminishes many households' market income entirely that is subsequently substituted by some kind of pre-existing benefit scheme, without any deliberate change in redistributive policies taking place. Such "automatic stabilizers" Bartels (2017) thus rather reflect the changing effects of features built into existing policies. In addition, relative redistribution should account for the fact that when market inequality is high, achieving an absolute decrease in inequality through policy-making is comparatively straightforward compared to contexts that are very egalitarian to begin with. A caveat with regard to this third dependent variable that while it is certainly a comprehensive measure, it is comparatively distant from the sphere of politics, as it depends on numerous intervening variables or "automatic equalizers" (Pontusson and Weisstanner 2018). Hence, overall responsiveness might be somewhat blurred using this indicator.

In sum, using the three different dependent variables, we hope to measure redistributive policy in a broad fashion, ranging from policy outputs to policy outcomes. While the different measures have specific strengths and weaknesses, we need to stress that our theoretical expectation about the responsiveness to high-income groups relative to those with lower incomes is constant across all three measures and all three of them have been used in the past to assess unequal responsiveness.

4.4. Measuring Group-Level Preferences for Redistribution

Establishing a common measurement for public preferences across countries is more challenging than doing the same for redistributive outcomes for several reasons.

While there is an abundance of surveys capturing support for redistribution and redistributive policies in some fashion, this does not imply a straightforward comparable measurement for it. While some survey series such as the International Social Survey Program (ISSP) have consistently asked specific items relating to redistribution in multiple waves/modules, other surveys such as the European Social Survey or the European Values Study have used different, albeit sometimes similar items to capture the respondents' redistribution affinity. Thus, there is no single "gold standard" item for capturing redistribution preferences.¹⁰ While this points to using multiple items in the measurement, the questionnaire overlap between different survey series is typically too low to use such "bridging" items across surveys as has for instance been done using various waves of the US Cooperative Congressional Election Study Tausanovitch and Warshaw (2013). Luckily, recent advances made in the estimation of aggregate-level opinion allow tackling these problems (Caughey et al. 2019; Caughey and Warshaw 2015; Claassen 2019; McGann 2014; Zhou 2019; Solt 2020). Rather than estimating individual-level opinions from survey data and subsequently aggregating them to the national, sub-national or group level, these approaches generally use survey data to estimate opinions at the group-level directly and employ some form of shrinkage to account for lower sub-national or group-level sample size. Caughey and Warshaw (2015) and Caughey et al. (2019) for instance extend the group-level Item Response Theory model for marginal counts of survey responses (Mislevy 1983) to measure preferences of broad demographic groups nested in geographic clusters over time (see also Solt 2020). The resulting estimates can then be used in a post-stratification step to measure national-level opinion, or used directly if the groups used during estimation correspond to the groups of interest (Caughey et al. 2019).

Since our interest lies in group-level preferences, we here use a similar strategy and estimate public opinion as a latent variable at the level of income groups via a simple linear latent factor model bearing some similarity to the model used by Voeten and Brewer (2006).¹¹ The model captures the mean response Y of income

¹⁰Some studies have used similar, albeit not identical items coupled with a binarization scheme to measure redistribution preferences across different survey series such as the ISSP and the European Social Survey (Lupu and Pontusson 2011; Van Heuvelen 2017). Note that even if a "gold standard" item did exist, the reliability of such single items is typically low and suffers if, for example, the positioning of items within surveys varies or differences are introduced by translation. For example, using bilingual populations, Pérez and Tavits (2019) demonstrate how the (randomized) application of survey questionnaires in languages that differ in whether their grammatical structure require strong gendering or not does influence the elicited attitudes towards gender equality.

¹¹We opt for a simple linear model specification, although it would have been desirable to use an

group $g \in [l, m, h]$ in country i and year t to a redistributive policy-related survey item j .¹²

$$\begin{aligned} Y_{gctj} &= a_j + b \times \theta_{gct} + \epsilon_{gctj} \\ \theta_{gct} &= \theta_{gc} + \tau_{gct} \\ \epsilon_{gctj} &\sim N(0, \sigma_j^2) \\ \theta_{gc} &\sim N(0, \sigma_{\theta_{gc}}^2) \\ \tau_{gct} &= N(0, 1) \end{aligned}$$

where a and b are factor intercepts and loadings respectively. The latter account for the fact that not all items are equally reliable indicators for redistributive preferences, but might instead be influenced more or less by nuisance dimensions. As discussed above, the groups used in our applications represent thirds of the income distribution, as delineated using the (weighted) quantiles of the survey-specific income scale.¹³ The country-group random effects θ_{gc} are introduced to shrink uncertain estimates for country-years for which only few or only less reliable items are available towards the over-time mean for that particular country-income group.¹⁴ We estimate the above model using the Bayesian NUTS algorithm implemented in Stan (Carpenter et al. 2017).¹⁵ In the analysis, we use posterior mean estimates for the country-specific latent variable estimates θ_{gct} as our final measurement.

We apply this group-level measurement strategy to a comprehensive survey database compiled for the purpose of this study intended to maximize the coverage of our data. Each of the surveys includes at least one, but typically two or more items

IRT-type of model specification that is based on a plausible individual-level response model such as the models of Caughey et al. (2019) (see also Solt 2020). However, the estimation of the respective models was too time-consuming in this application. However, as shown by McGann (2014: 124f/128) using marginals for binary or dichotomized survey items, the results obtained from IRT-type models versus linear models are rather similar.

¹²Where available, we use survey weights to calculate the group-specific mean responses.

¹³Note that surveys in our application do not only differ in terms of the number of income bands provided, but also with regard to whether they ask for household (mostly) or individual income (few), income before or after taxes (or not specifying which) or use a relative income scale rather than actual income bands.

¹⁴Unlike Caughey and Warshaw (2015) and Caughey et al. (2019) we chose a country-group effects rather than a dynamic shrinkage structure for the latent trait θ_{gct} as our survey data covers a considerable number of countries with only two or three observed years that are comparatively far apart time-wise, such that there are few adjacent years on which to draw for the shrinkage.

¹⁵Following Caughey et al. (2019), we constrain the loading parameters β to be positive and use weakly-informative priors during the estimation and estimate the model using six chains with 6000 iterations each, of which 4000 were discarded as warm-up. Using this setup, the model converged easily and provided for a sufficiently large effective number of iterations for posterior inference.

broadly related to preferences for redistribution, social spending and redistributive policies, i.e. items that could serve as the manifest indicators for what is a complex latent orientation. Specifically, we use data from the ISSP (Role of Government I-V; Social inequality I-IV; see ISSP 1986; ISSP 1992; ISSP 1999; ISSP 2008; ISSP 2018; ISSP 1989; ISSP 1994; ISSP 2002; ISSP 2017), the World Values Surveys (waves 1-6, see Inglehart et al. 2018), the European Values Study (EVS 2015), the International Social Justice Project 1991 and 1996 (Wegener 2002), the European Social Survey (rounds 1-8, see ESS 2002; ESS 2004; ESS 2006; ESS 2008; ESS 2010; ESS 2012; ESS 2014; ESS 2016), the Post-Communist Publics Studies I and II (Rotman et al. 2004), several waves of the Eurobarometer and Candidate Barometer Surveys (Eurobarometers 52.1 1999; 56.1 2001; 72.1 2009; 74.1 2010 and Candidate Barometer 2002 wave 1, see EU-Commission 2012a; EU-Commission 2012b; EU-Commission 2012c; EU-Commission 2013; Commission 2016), module 4 of the Comparative Study of electoral systems (The Comparative Study of Electoral Systems 2018), as well as the 2008, 2010 and 2012 waves of the Americas Barometer (LAPOP 2008; LAPOP 2010; LAPOP 2012).

For each survey, we classify respondents as falling into country-specific (weighted) tercile groups of the income distribution, representing the income groups referenced throughout this paper.¹⁶ We then coded all items potentially tapping into respondents'

¹⁶Instead of simply or solely relying on weighted quantiles of the empirical income distribution with the often coarse income categories for any given sample, we use a hybrid approach to derive these tercile groups. We start by calculating weighted quantiles to delineate income groups, relying on the simple definition of selecting the lowest value for which at least 33% (66%) of observations (in the weighted distribution) lie below that value as the last category falling in the first (second) tercile group. In some cases where the empirical values cluster in certain categories (i.e. the data contains many ties due to a low number of categories or respondents rounding their response to convenient values when presented with an open response option), the threshold category will contain a large share of respondents and assigning it to for example the first tercile can result in quite drastic deviation of the group's eventual size from its nominal size (if say the threshold category takes the first group from 32% to 43% of the cumulative income distribution). To try and circumvent this problem, we calculate another version of the grouping into tercile groups that uses binning algorithms generating an income group classification that most closely resembles the target quantiles. More specifically, we used the R-package `cutr` (Fabri 2019) available from github (<https://github.com/moodymudskipper/cutr>) and modified the code to allow for the usage of weights in the optimization and the penalization of deviations from the quantile thresholds (instead of group sizes). For income questions with no more than 40 categories, we apply this method directly. Out of the two resulting groupings, we then opt for the one that most closely approximates the desired tercile groups in terms of the weighted income distribution. Now for income distributions with more than 40 distinct values, the brute-force algorithm checking every possible binning quickly becomes computationally prohibitive. To still be able to use the algorithm described above, we introduce an intermediate step in which we try to reduce the number of categories beforehand (note that the weighted quantiles for the affected samples are still based on the original income distribution). Namely, we start from the least populated category out of all categories containing less than 1% of observations (in the weighted distribution) and group them with their smallest neighboring category, recalculate the

redistribution preferences, harmonized the coding of (near-)identical items used in different surveys and calculate simple (weighted) averages with higher values indicating preferences for more redistribution/income equality. Our database covers around 1.27 million respondents with non-missing income data in 121 countries¹⁷ and 37 years starting in 1981, resulting in 821 country-years. Altogether, we identified 115 items potentially tapping into preferences for redistribution.

Several things can be noted regarding the seemingly large number of items. First, many of the items covered are relatively similar and differ only slightly in terms of their wording or the number of categories. For example, the different surveys we coded contained eight different variants of an item asking respondents for their agreement to whether incomes should be made more equal (or that the government should make incomes more equal).¹⁸ Likewise, there are five different variants of items asking whether respondents agree that income differences are somehow necessary for individual effort and a prospering economy. Despite these differences in item wording, etc. a respondent favorable of redistribution and aiming for an egalitarian society should agree to all variants of the former set of items and generally show less agreement to all variants of the later item. Thus, the number of concepts invoked in these different items is much lower than their nominal count.

Second, we deliberately opted for an inclusive measurement strategy. Hence,

category shares and repeat this merging until either a) no groups containing less than 1% of the observations are left or b) the number of categories has been reduced to 40. We then apply the binning algorithm as before. Finally, out of the two possible groupings (weighted quantiles vs. algorithm-based with prior reduction of categories) we again select the one that minimizes deviations to the desired tercile groups. For income distributions for which the number of income categories cannot be reduced to 40 this way, we simply use the weighted quantiles.

¹⁷This includes sub-national entities like Hong-Kong with multiple stand-alone surveys conducted in them. Where possible, we aggregate sub-national entities/regions like Northern Ireland vs. Great Britain and East Germany vs- West Germany with separate samples to the country level using appropriate weights to account for disproportionate sample sizes relative to the population. Likewise, observations of countries that eventually dissolved into two (or more) separate countries (e.g. Czechoslovakia in 1992 and before) are (where possible) treated as separate shortly before the official dissolution already.

¹⁸These are the following: 10-category self-placement on “Income should be made more equal” vs “There should be greater incentives for individual effort” (EVS and WVS, with a four-category variant used in India); 5-category placement on “The government should take measures to reduce differences in income levels” (ESS and CSES Module IV); 4-category agree-disagree item for “Incomes should be more equal among members of society” (WVS sample in Hong Kong); 4-category response to “On the whole, do you think it should be or should not be the governments responsibility to: Reduce income differences between the rich and poor” (ISSP Role of Government and Post-Communist Publics Study); 5-category agree-disagree scale on “It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.” (ISSP Role of Government and Social Inequality) and a 7-category agree-disagree scale for “The (COUNTRY) government should implement strong policies to reduce income inequality between the rich and the poor. To what extent do you agree or disagree with this statement” (Americas Barometer Surveys).

apart from items relating directly to income inequality as an outcome, we also respondents' spending preferences in the domains of social welfare, healthcare, retirement pensions, unemployment benefits as well as items asking respondents whether they think that providing health care, jobs for the unemployed, housing and education for the poor, etc. is the government's responsibility. Moreover, we cover preferences regarding progressiveness of taxation and trade-offs between levels of social welfare benefits and public debt. As a last major group, we include several items about beliefs about the adverse effects of income inequality and normative statements about it (e.g., income inequality considered as being "too high"). This is consistent with our broad dependent variable and the notion of citizens' that care about policy ends (redistributive outcomes) more than about policy means (the myriad of pathways that lead to these outcomes).

In the analysis below, we rely on a subset of this database. Namely, we drop items where polarization across income groups was very low on average, items that were observed in less than 10 country years and some items that proved very noisy in the scaling procedure used below. This left us with 66 items and we include only country-years for which at least two of these 66 items are observed and excluded countries where this yields only a single country-year observation. This leaves us with a data set spanning 1.03 million respondents clustered in 89 countries and 649 country-years. A full list of the 66 items and the years and surveys in which they appear is given in the Table in Section A.1 in the Appendix.

Naturally, any given survey typically contains but a handful of these 66 items at best and only few items are contained in many surveys and could thus serve as a simple "bridge" to alone establish a common latent scale across surveys if that scale was to be estimated at the individual level (cf. Tausanovitch and Warshaw 2013). However, at the level of income groups, we frequently observe the same groups (e.g., upper income third) in two different surveys conducted in the same year and the same country. Hence, assuming that whether a respondent participates in one versus the other survey is independent of her redistribution preferences, the group-level response patterns for that country-year-group bridge the item sets used in both surveys.¹⁹ Such group-level bridging observations are relatively common in our data,

¹⁹This is akin to using bridging legislators in the study of state legislatures vis-à-vis congress (Shor et al. 2010). To give a more precise example, we assume for instance that whether a respondent in the lower income tercile in e.g. Bulgaria in 1999 participates in the 3rd EVS wave, the ISSP Social Inequality round III or the 2nd wave of the Post-Communist Public study is independent of her redistributive preferences. Note that this does not preclude the possibility that her overall affinity to participate in surveys is related to her redistribution preferences.

as 162 out of the 649 available country-years are covered by more than one survey.²⁰ Figure 1 displays the bridging relationships between different survey series in our data that are induced by either items common to both survey series or country-years covered simultaneously by both. None of the constituting data sets remain isolated and most display multiple bridging relationships.

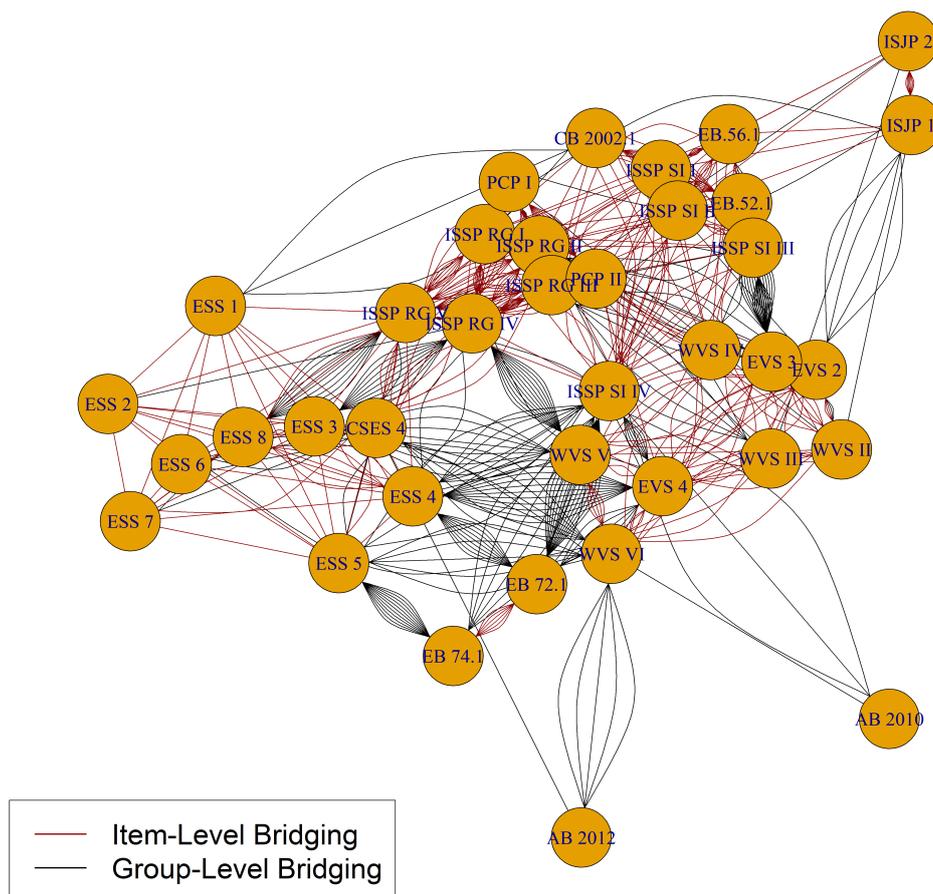
One might wonder whether the large number and variety of items capture redistribution preferences adequately or whether the estimates are at risk of being "hijacked" by nuisance dimensions. In particular, Caughey et al. (2019), who use many of the same data sets employed here distinguish an "absolute economic conservatism" and a "relative economic conservatism" dimension in their analysis, attributing items analyzed here to only one of the two dimensions. This distinction is based on whether an item is asked in absolute terms (e.g., "Government should ensure that the wealth of the country is redistributed in a fair way to all citizens", Eurobarometer 72.1 2009) or relative to the status quo of inequality or policy in the country ("The government should take measures to reduce differences in income levels", European Social Surveys) and somewhat mirrors the concern of Elkjær and Iversen (2020) discussed above regarding the analysis of changes versus levels of social spending. Yet, as shown in Section B in the Appendix, the items included in the different surveys typically display a pattern that can reasonably be treated as uni-dimensional, both at the individual and at the group level.²¹

Figure 2 displays the empirical cumulative distribution of the preference estimates derived from our scaling model for the middle-income group (solid black line and

²⁰Note that the sample of 649 country years that we use for the estimation of group-level preferences is much a larger than the sample of country-years that we are able to analyze subsequently due to missing values on the covariates and especially the independent variable. However, we keep as many country years as possible in the analysis in order to a) have more data available for the estimation of the loading and intercept parameters and b) to maximize the number of bridging observations in the data.

²¹Another distinction that has been made by Cavallé and Trump (2014) is between a "redistribution to"-dimension of welfare and redistribution preferences from a "redistribution from"-dimension, which are empirically only weakly correlated and of which only the latter is polarized by income. However, the survey items included here generally avoid items tapping into the deservingness of welfare recipients, the social distance to them or the reasons for their economic hardship that are used as indicators for the "redistribution to"-dimension. Note however that many of the surveys covered include a set of items that Cavallé and Trump (2014) group as constituting a separate "government role"-dimension in the international data (see also Breznau 2019). However, that dimension - unlike the "redistribution to"-dimension - is strongly correlated with the redistribution-from dimension. Also note that Caughey et al. (2019) also group the "government responsibility" items together as general items about respondent's desire for the government to redistribute to estimate their more general absolute economic conservatism dimension. After all, at least in the ISSP role of Government modules, these items are part of the same item battery with similar question wording.

Figure 1: Bridging Relationships in Survey Data



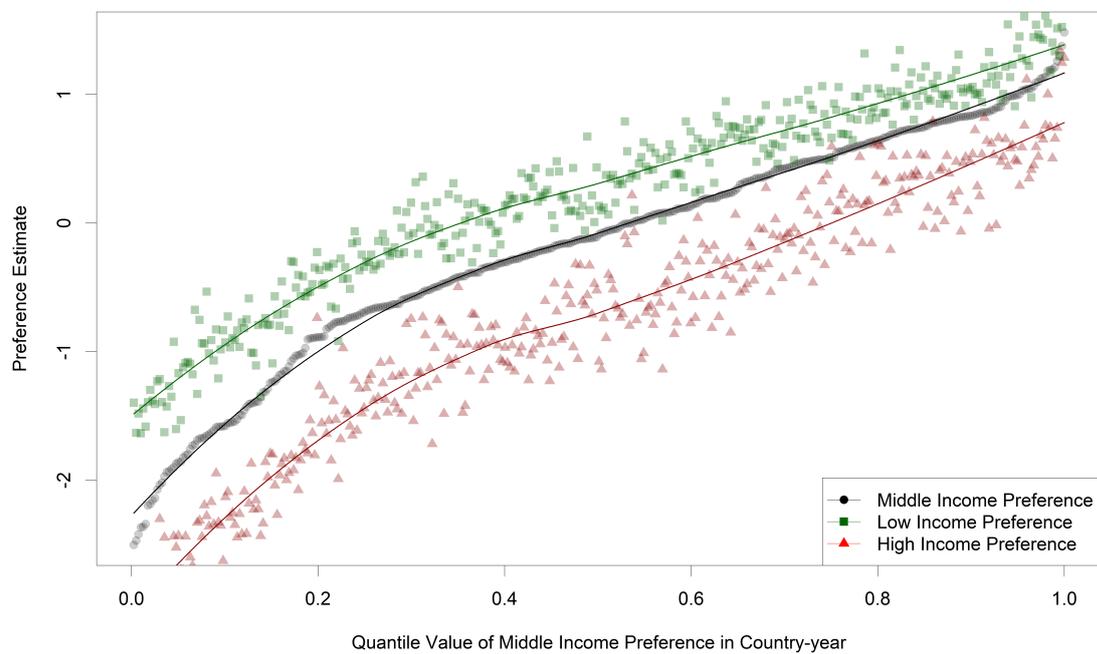
Note: Bridging relations between survey series in the survey dataset used for estimation of preference variables. Each node represents a survey (series) and the lines different bridging connections between them. Red lines denote bridging via items that are included in both surveys, gray lines indicate group-level bridging occurrences, i.e. country-years where the three income groups are observed in two different surveys. Survey acronyms: AB = Americas Barometer; CB = Candidate Barometer; CSES = Comparative Study of Electoral Systems; EB = Eurobarometer; ESS = European Social Survey; EVS = European Values Survey; ISJP = International Social Justice Project; ISSP = International Social Survey Programme; PCP = Post-Communist Publics Study; WVS = World Values Survey

dots), alongside the estimates of the corresponding country-year for the low-income group (solid green line and squares) and the high-income groups (solid red line and triangles). Hence the estimates on the same position on the x-axis belong to the same country-year. As can be seen, for the vast majority of country-years, the three income groups have the expected ordering in which support for redistribution decreases moving from the lower income group to higher income groups (see also Figure 3 in the Appendix). What is more, across country-years, preferences are very highly correlated. The smoothed curves for low-incomes (green line) and high incomes (red line) run almost parallel to the smoothed curve for capturing middle-income preferences (solid black line). Indeed, the correlation amounts to .976 (.973) for the low (high) and the middle-income group. Even within countries over time, this correlation amounts to .863 (.834). Correlations of preferences across groups of similar magnitudes have been identified in prior research across different issues in a given country (Gilens 2012; Persson and Gilljam 2018; Schakel 2019), in cross-country comparative settings for single issues (Bartels 2017; Elkjær and Iversen 2020), as well as for single issues within countries over time (Soroka and Wlezien 2008). These might easily lead to a high degree of multi-collinearity in empirical models pitting groups against each other, such that distinguishing relative group influence becomes challenging. Going beyond the statistical problems associated with this, it raises the question of whether any differences in responsiveness among groups ultimately imply differences in substantive representation (Enns 2015; Branham et al. 2017). In any case, the high correlation of preferences needs to be taken into consideration in evaluating the results below.

Table 9 in the Appendix contains list of country-years included in our analysis for each of the dependent variables employed. By relying on a multi-item measurement strategy exploiting group-level bridging, we are able to realize considerably larger data sets in the analysis compared to prior research using any of our dependent variables. Altogether, our analysis draws on around 390 different country-years in 40 different countries.²²

²²Note that we restrict our analysis to country-years in which the respective country was judged as being "free" based on the data provided by freedomhouse.org, as we have stronger expectations for responsiveness for well-functioning democracies.

Figure 2: Distribution of Estimated Preference Scores



Note: Estimated mean preference of the different income groups (y-axis) by quantile value (x-axis) of middle-income group for that particular year. The black dots denote the posterior mean estimate for the middle-income preference in a given country-year, whereas the red (green) triangles (squares) depict the preference estimate for the high (low) income group for that specific country-year. Country-years appearing in any one of the analyses below used. Coloured lines represent loess fits.

4.5. Further Data and Control Variables

As indicated above, controlling for the macro-economic situation is of paramount importance when changes in redistributive policy are analyzed. Not only may a large part of the response to macro-economic shocks in spending or redistribution more generally result from existing and built-in "automatic stabilizers" (Bartels 2017) that respond to economic shocks without any active policy intervention, but rather macro-economic conditions might independently affect citizen preferences and provoke policy reforms as suggested by Elkjær and Iversen (2020). To account for this possibility, we here control for six broad macro-economic and demographic indicators.

First, we capture the macro-economic situation by including real GDP growth and GDP per capita (in 2010 international \$) to capture contexts that might trigger a Keynesian policy response. Going further, we control for the unemployment rate, which under a given generosity of benefits should be an important predictor of social spending and redistribution (as the number of households with zero or very small market income rises in unemployment).

Second, we include the old age dependency ratio in the population as well as the employment to population ratio for those aged 15 and above. Together, these figures gauge the extent to which the adult population is economically active going beyond what can be captured by the unemployment rate alone. Intuitively, the less people are unemployed, in retirement age or not actively looking for employment for other reasons, the lower the baseline level of redistribution required to provide all households with a at least a minimum standard of living.²³ As another control variable, we include a dummy capturing years in which a respective country was part of the Euro-Zone. As argued by Tober and Busemeyer (2019), membership in the Euro-Zone implies adherence to formal and informal fiscal principles regarding debts and deficits, thereby potentially limiting the extent of (re-)distributive spending that is possible without additional taxation. Extending this notion further, we also control for the level of general government debt²⁴ Finally, for models capturing relative redistribution

²³We downloaded the data automatically from the servers of the World Bank using the `wbstats` package in R (Piburn 2018). For unemployment rates and employment-to-population ratios, we use ILO estimates and replace missings with national estimates where applicable. Further missings are reduced by replacing relying on data from the Penn World Tables (Feenstra et al. 2015), the Comparative Political Data set (Armingeon et al. 2018) or the IMF World Economic Outlook (April 2020 edition).

²⁴We combine estimates from the IMF government finance statistics (downloaded via the IMF API), the Global debt database (Mbaye et al. 2018) and the Historical Public Debt database (Abbas et al. 2010; Abbas et al. 2011). Where necessary, we supplement missings with values

based on the OECD database, we control for the Gini-coefficient of market incomes before taxes and transfers used in the calculation of relative redistribution.

Table 10 in the Appendix contains descriptive statistics for the variables included in our analysis. As anticipated from the slow-moving nature of policy and associated outcomes and as already observed for our preference variables, variation within countries over time is much smaller than across countries for not only our dependent variables and most of the control variables, but also for our preference variable estimates.

5. Results

5.1. Replicating Prior Results

Before turning to the results of our preferred model specifications, Table 1 displays a set of models that replicate the main models displayed by Elkjær and Iversen (2020) and Schakel et al. (2020), using the dependent variable and specification preferred by them, but estimated using our preference measures. For each model, we present results based on all country-years for which we have data as well as for the subset of country-years also appearing in the respective studies.²⁵ Hence, the first set of models follows Schakel et al. (2020) and models either overall welfare generosity or generosity of unemployment insurance, pensions and sickness insurance (i.e. the sub-indices in the CWED data) in a pooled model with a dummy control for policy area and country-level random effects. The dependent variable(s) are average changes from t to $t+4$ and the models include only the high- and low-income group's preferences.²⁶

The second set of models follows Elkjær and Iversen (2020) and captures social spending as a share of GDP in the current year (with or without country-fixed effects). It does not include further control variables. Instead of Prais-Winsten models, we here use simple OLS models, but present Prais-Winsten model in Table 12 in the Appendix. As can be seen, the patterns found in both papers generally replicate using our data, despite the somewhat different measurement approach and the larger samples used in our analysis. Hence, the results seem to indicate a dominance of the interest of middle-incomes relative to both high and low incomes in the models

from the Comparative Political data set where necessary (Armingeon et al. 2018)

²⁵For the analysis conducted by Schakel et al. (2020), we have data for the same country-years. For the replication of Elkjær and Iversen (2020), our sample does not contain country-years covered only by the ISSP Environment modules.

²⁶This variable is calculated by averaging the percentage change in each of the four years following the survey year relative to that survey year.

following Elkjær and Iversen (2020) when we look at the models without fixed effects (see also Model (3) in Table 11 and Model (4) in Table 12 in the Appendix). For the models following Schakel et al. (2020) that use welfare generosity as the dependent variable, the results seemingly imply higher responsiveness to high-income interests compared to low-income interests. Thus, our measurement approach more or less replicates previous findings, but has the advantage of a larger coverage country- and time-wise.

5.2. Main Results

We now turn to Table 2 and to models in our preferred specification, i.e. models in changes from the year of the survey to two years afterwards including all three income groups. For the sake of illustration, we also include models with either only middle-income preferences or with low- and high-income preferences. The most striking result in Table 2 is the absence of robust responsiveness across dependent variables and models. For the CWED welfare generosity index, Model (1) with only middle-income preferences as a proxy for median or overall public preferences suggests some overall responsiveness. Maybe unsurprisingly, the model with only low- and high-income preferences for this policy output measure also displays similar patterns to the ones in Table 1. Yet, when all three income groups are considered simultaneously, policy is not estimated to change significantly in response to either of them. Thus, instead of a dominant group, this result suggests that the policy responds to overall public opinion (see Model (1)). Model (3) in that table even suggests an implausible negative responsiveness to the low-income groups. Comparing the estimates across Models (1) to (3), it is certainly true that the inclusion of all three income groups leads to a substantial problem of multi-collinearity, as evidenced by the large increase in standard errors in Model (3) compared to models with only the middle-income group or only the low-income and high-income groups included. Yet, we wish to stress again that without including all three income groups, little can be learned about the relative strength of the included groups. Hence, rather than a purely statistical problem, our inability to make out a less or more powerful income group irrespective of the substantively larger sample size compared to Schakel et al. (2020) is a substantive problem.

For the policy outcome variables, social spending and relative redistribution, the absence of statistically detectable responsiveness is even more dire. Despite the larger sample sizes, we do not observe any policy responsiveness whatsoever even

Table 1: Model Results replicating Previous Studies

	Total Welfare Generosity		Pooled Welfare Generosity		OECD Social Spending			
	Mean Change t to t+4	Mean Change t to t+4	Mean Change t to t+4	Mean Change t to t+4	Levels at t	Levels at t, FE		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	.811 (.514)	.827*** (.258)	.273 (.180)	.346*** (.099)	19.594*** (2.627)	16.386*** (3.133)		
Low-Income Pref.	-.548 (.587)	-.468 (.296)	-.122 (.194)	-.170* (.095)	-2.746 (3.228)	-3.521 (2.838)	-1.710 (1.280)	-.709 (.829)
Middle-Income Pref.					7.818* (4.505)	7.039*** (2.786)	2.759 (1.860)	.962 (1.169)
High-Income Pref.	.883** (.399)	.708*** (.217)	.236* (.130)	.235*** (.068)	-2.857 (2.838)	-4.037 (2.643)	-519 (1.350)	-.880 (.777)
N	42	141	130	463	113	391	113	391
R ²	.483	.204	.161	.083	.383	.118	.341	.281
Adjusted R ²	.184	.109	.033	.048	.348	.104	.142	.187

*p < .1; **p < .05; ***p < .01

Note: Panel-Clustered standard errors based on Arellano (1987) in parentheses. Values rounded to the third integer. Models for welfare generosity model average change of Generosity Index from T to T+4 averaged across years 1 to 4 relative to T. Total welfare Generosity columns use overall Generosity index as the DV, Pooled Welfare Generosity columns use field-specific (i.e. pension, sickness insurance, unemployment insurance) sub-indices and include policy field dummies. Models are Random effect models with country-level random effects. Controls not shown: GDP growth, Employment to Population Rate, Old age dependency ratio, GDP per capita, General government debt as % of GDP, decade dummies and a dummy for Euro-Zone membership. For Social Spending, the DV is the spending level at T with our without country fixed effects, no further control variables used. Each model is presented for country-years present also in Schakel et al (2020) or Elkjaer and Iversen (2020) and for all available country-years.

when only the preferences of the middle-income group are used as a proxy for overall public opinion (Models 4 and 7). The coefficients for the middle-income group are substantively small and far from statistical significance. Thus, when policy outcomes are considered, we replicate the findings of Donnelly and Lefkofridi (2014), who find no overall responsiveness in redistributive policy-making (for a similar finding with regard to responsiveness of party positions, see O’Grady and Abou-Chadi 2019). Furthermore, when either the low- or high-income preferences or all three groups are included, none of the models suggest statistically significant responsiveness to any of the three groups such that we cannot distinguish the relative responsiveness to different groups. In particular, we do not see a pattern constituting evidence for our hypotheses of unequal representation, i.e. an over-representation of high incomes as hypothesized in H_1 .

What is noteworthy, however, is that high incomes are not estimated dominant despite the concerns about models in changes and cyclical preference patterns as potentially inducing a pro-affluent bias in estimation raised by Elkjær and Iversen (2020). Rather, once we control for "automatic stabilizers" (Bartels 2017) or the macro-economic situation more generally, we do not detect any group being dominant vis-à-vis the others.²⁷ In addition, the results in Table 2 suggest little overall responsiveness save for the welfare generosity variable, which is consistent with the notion that the link between preferences and policy output is more direct than for policy outcomes.

Table 3 replicates the models from Table 2, but instead of changes from t to $t+2$, it uses levels at $t+2$ as the dependent variable and controls for country-fixed effects. These models likewise do not suggest meaningful representation. While coefficient estimates are somewhat higher, possibly owing to the relatively small within-country variance of our preference estimates (see Table 10 in the Appendix), there again is no robust pattern of responsiveness across models and dependent variables. In particular and in contrast to Elkjær and Iversen (2020), the models do not generally suggest a dominance of middle class preferences. We only produce corresponding

²⁷Note that unlike the results obtained by Elkjær and Iversen (2020), we do not find consistent evidence for a dominance of middle incomes when we run a model with only group preferences and decade dummies as predictors for the same sample (results not shown) or when we use an equation in levels, but include neither a lagged dependent variable nor country-fixed effects (see Table 11 in the Appendix). In addition, Table 12 in the Appendix presents models that use Prais-Winsten regressions to account for serial correlation in the outcomes of interest. These models likewise do not indicate a consistent dominance of the middle-income groups and in addition also display the unanticipated patterns of "perverse representation", i.e. negative and significant coefficients for preferences of certain groups.

Table 2: Model Results for Models in Changes

	Welfare Generosity			OECD Social Spending			OECD Relative Redistribution		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	1.244** (.613)	1.675*** (.635)	1.700*** (.656)	2.215** (.962)	2.171** (.866)	2.184** (.879)	3.033*** (.873)	2.897*** (.919)	2.952*** (.917)
Low-Income Pref.		-.324 (.290)	-.656* (.385)		.028 (.307)	-.210 (.278)		.089 (.709)	-.876 (.997)
Middle-Income Pref.	.433*** (.123)		.576 (.492)	.004 (.107)		.414 (.494)	.031 (.286)		1.649 (1.006)
High-Income Pref.		.596*** (.211)	.351 (.317)		-.036 (.204)	-.228 (.378)		-.124 (.540)	-.856 (.626)
N	156	156	156	391	391	391	190	190	190
R ²	.171	.184	.192	.530	.530	.531	.473	.474	.482
Adjusted R ²	.082	.090	.092	.510	.509	.508	.421	.418	.424

*p < .1; **p < .05; ***p < .01

Note: Panel-Clustered standard errors based on Arellano (1987) in parentheses. Values rounded to the third integer. Non-binary covariates standardized and mean-centered. Controls not shown: GDP growth, Employment to Population Rate, Old age dependency ratio, GDP per capita, General government debt as % of GDP, decade dummies and a dummy for Euro-Zone membership. Models for Relative redistribution also control for Market Inequality Gini. Models also include changes from t to t+2 of these variables.

patterns when we drop country-fixed effects (see Table 11 in the Appendix) or use Prais-Winsten regression models to control for auto-correlated errors (see Table 12 in the Appendix). Yet, even in those specifications, a dominance of M is not consistently estimated across dependent variables. Even more worrisome, the models in Table 3 (as well as the alternative specifications in Tables 11 and 12 in the Appendix) frequently yield negative coefficient estimates, i.e. suggest that policy responds to preferences by moving into the opposite direction. Some of these coefficients even reach statistical significance.

Note that these implausible patterns are not attributable to multi-collinearity alone, as they arise even in models that only include the middle-income group (Models 4 and 7, for a similar result, see Peters and Ensink 2015: 589). As already discussed with regard to the models presented in Table 2, the "perverse representation" (Bartels 2017) implied by this is theoretically most implausible and should make us skeptical of the model results. Note however, that we are not the first to find such patterns. Rather, similar patterns with negative coefficients (significant and insignificant) are frequently observed in models of (unequal) representation pitting different parts of the electorate against each other, where it is often the low-income group exhibiting it (Bartels 2017: tables 5 to 11; Erikson and Bhatti 2011: table 3; Stadelmann et al. 2015: table 2; Ura and Ellis 2008: table 4; Donnelly and Lefkofridi 2014: table 4; Hayes 2013: tables 1 and 2; Rigby and Wright 2013: table 1; Elkjær and Iversen 2020: table 3). Hence, not only do our models yield inconclusive results, but rather they reveal a pattern that is theoretically puzzling and not yet explained in the literature.²⁸

In sum, in the specifications that we argue to be most relevant to our analysis

²⁸Gilens (2012: 253-258) draws on Achen (1985) to argue that such negative coefficients represent an artifact that can arise as a function of highly correlated variables (preferences) in conjunction with correlated measurement errors, in this case stemming from the fact that preferences across income groups are derived from the same survey item. Moreover, in the case of the regression-based approach towards imputing preferences used by Gilens (2012) and others, correlated errors might arise from the dependence of the estimates on the same predictive model. Note however that he - consistent with an under-representation of low incomes - mistakenly claims that these occur for the regressor with the smallest true relationship to the dependent variable, whereas Achen (1985) shows that the corresponding biases affect the least reliably measured collinear regressor. Precisely for the low-income group, this less reliable measurement could stem from the combination of a lower variance of true underlying preferences in conjunction with measurement errors that are nearly identical across income groups. While correlated measurement errors are likely in a cross-country comparative setting due to differences in the status quo of politics and due to differential item functioning (Stegmueller 2011), the multi-item measurement strategy in this paper is explicitly used to mitigate problems of measurement error stemming from single items (Ansolabehere et al. 2008). Also note that negative coefficients does arise even in models containing only one of the groups (see Table 3).

based on the incremental nature of policy-making and its anchoring to the status quo, we cannot identify groups that are significantly more or less influential and can hence not adjudicate between the conflicting findings in the literature. Unlike Schakel et al. (2020) we cannot confirm our hypothesis of a dominance of high-income groups in policy-making once we include middle-income preferences into our models. Yet, we conversely do not see compelling evidence of a middle-class supremacy, be it in our preferred specification in changes, or in a fixed effects specification as used by Elkjær and Iversen (2020). Furthermore, even alternative model specifications that do not account for unobserved heterogeneity do not yield a consistent picture of one group being dominant. Given these puzzling findings, the remainder of this section uses a series of alternative model specifications and measurements to demonstrate that our results are not limited to the precise specifications presented above and the measurements they employ but are rather reflective of a more general inability to gauge the relative influence of different groups.

5.3. Further Tests

Redistribution and the Working-Age Population

In the above results, we opted for a comprehensive analysis using summary measures of welfare generosity, social spending and redistribution that pooled all forms of social policy, spending and redistribution. In particular, our measures all include redistributive policy aiming at providing old-age individuals with adequate standards of living. However, it can be argued that including old-age pension systems in our analysis might bias our findings against identifying meaningful responsiveness. The public and legislators might be less willing to implement even incremental changes to pension policy (Breunig and Busemeyer 2012: 926) as doing so would violate a "generational contract" or invalidate long-term contributions made by old-age households in the past. Moreover old-age households may not simply react to for instance cutbacks in pension systems by increasing their market activity and can also not retroactively switch to private pension plans. In addition, to the extent that redistribution preferences are informed by changing macro-economic conditions (cf. Kelly and Enns 2010; Elkjær and Iversen 2020), the link to redistributive outcomes crafted in response to them might be blurred by including the elderly as pension income is generally less affected by these conditions (Pontusson and Weisstanner 2018: 38).

Table 3: Model Results for Models in Levels at t+2 with Country Fixed Effects

	Welfare Generosity			OECD Social Spending			OECD Relative Redistribution		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(Levels at t+2, Country FE)	(Levels at t+2, Country FE)	(Levels at t+2, Country FE)						
Low-Income Pref.		-.455 (.507)	-1.092* (.611)		-.671 (.653)	-.911 (.864)		.425 (.984)	.721 (1.212)
Middle-Income Pref.	.090 (.429)		1.016 (.910)	-.702* (.390)		.437 (.847)	-.783* (.455)		-.577 (1.083)
High-Income Pref.		.275 (.473)	-.065 (.646)		-.254 (.595)	-.437 (.640)		-1.159 (1.047)	-.914 (1.074)
N	156	156	156	391	391	391	190	190	190
R ²	.379	.381	.386	.373	.377	.377	.267	.273	.274
Adjusted R ²	.236	.232	.233	.283	.285	.284	.051	.052	.047

*p < .1; **p < .05; ***p < .01

Panel-Clustered standard errors based on Arellano (1987) in parentheses. Values rounded to the third integer. Non-binary covariates standardized and mean-centered. Controls not shown: GDP growth, Employment to Population Rate, Old age dependency ratio, GDP per capita, General government debt as % of GDP, decade dummies and a dummy for Euro-Zone membership. Models for Relative redistribution also control for Market Inequality Gini.

For these reasons, we replicate the models from Table 2 with our dependent variables applied to working-age redistributive policy. For the CWED generosity measures, we hence use the sum of the sub-indices for sickness insurance and unemployment insurance generosity. For social spending, we exclude spending on old-age pensions and survivors' benefits. Finally, for our measure of relative redistribution, we rely on figures calculated for households with at least one working-age member. As can be seen from the results presented in Table 4, our inability to detect overall responsiveness or differences across income groups is not a function of our comprehensive definition of redistributive policy. Rather, the models yield similarly inconclusive results.

Reducing Collinearity: Extreme Income Groups

As discussed above, we rely on thirds of the income distribution as our group structure for conceptual and statistical reasons. However, doing so might lead to an unduly high collinearity in our estimated preference measures that is not a function of actual preference similarity or collinearity for several reasons. First, many surveys contain only relatively coarse income bands and/or do not make a clear distinction as to whether the income asked about is income before or after taxes. Some even ask for relative income only, giving no monetary income bands, others use individual rather than household income. Finally, not many surveys contain detailed measures of household size that would allow to set a monetary income value in relation to the number of people depending on it. As a result, our income groups might contain a certain degree of miss-classification, which in turn increases the similarity of the preferences measured in each of the three groups in a given country-year. To alleviate this problem and to increase comparability to approaches following Gilens (2012) that use preferences at the 10 and 90 percent quantile, Table 5 replicates the models from Table 2 using preference estimates for the three income groups obtained for more "extreme" incomes, namely those below the 10% quantile, between the 45% and 55% quantiles and those above the 90% quantile.²⁹ This way, we hope to minimize classification errors as we can be more sure to select actually wealthy versus middle-income versus low-income households.³⁰

²⁹For this procedure, we use the same hybrid binning approach described above.

³⁰The correlation of the estimated preferences is indeed reduced somewhat in the resulting estimates, but remains high, amounting to .92 (.92) between the middle-income group and the low-income (high-income) group

Table 4: Model Results for Models in Changes, for Working-Age Dependent Variables

	Nonelderly Generosity		Nonelderly Spending		Nonelderly Redistribution				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)
Constant	.600** (.257)	.850*** (.321)	.850*** (.327)	.754*** (.255)	.690** (.270)	.689** (.269)	2.955*** (.697)	3.081*** (.778)	3.102*** (.793)
Low-Income Pref.		-.243 (.321)	-.236 (.368)		.011 (.193)	-.015 (.242)		-.389 (.715)	-.987 (1.041)
Middle-Income Pref.	.154** (.067)		-.012 (.390)	-.111* (.067)		.044 (.271)	-.048 (.259)		1.024 (.925)
High-Income Pref.		.310 (.225)	.315 (.314)		-.115 (.143)	-.135 (.197)		.191 (.541)	-.263 (.538)
N	178	178	178	334	334	334	190	190	190
R ²	.160	.174	.174	.553	.553	.553	.509	.510	.513
Adjusted R ²	.082	.092	.086	.530	.529	.528	.461	.459	.459

*p < .1; **p < .05; ***p < .01

Note: Panel-Clustered standard errors based on Arellano (1987) in parentheses. Values rounded to the third integer. Non-binary covariates standardized and mean-centered. Controls not shown: GDP growth, Employment to Population Rate, Old age dependency ratio, GDP per capita, General government debt as % of GDP, decade dummies and a dummy for Euro-Zone membership. Models for Relative redistribution also control for Market Inequality Gini. Models also include changes from t to t+2 of these variables.

As anticipated, the standard errors are generally smaller in Table 5 compared to the results in Table 2. Yet, as can be seen, using more extreme income groups nevertheless does not lead to more systematic results that would suggest strong overall representation or a detectable imbalance across income groups. While the coefficients associated with high incomes in the model for Welfare generosity that includes all income groups (Model 3) reaches significance, this pattern does not hold for the other dependent variables. Rather, the same models for social spending and relative redistribution yield negative coefficients for that group. In sum, a reduction in multi-collinearity does not remedy the substantive problem of adjudicating between responsiveness to the different income groups.

Accounting for Correlated Measurement Error

As discussed above (see footnote 28) and in Gilens (2012: 253-258), the fact that our preference estimates are derived from the application of the same survey items to different income groups may induce correlated measurement errors, especially in a cross-country comparative setting where subtle differences in translation, etc. affect all individuals in a given country-year (cf. also Stegmueller 2011). Given that such correlated measurement error might induce spurious negative coefficients (Achen 1985), i.e. might be responsible for patterns of seemingly "perverse" representation (Gilens 2012), we try to account for this possibility in the context of our simple factor measurement model. Namely, we introduce a slight modification of our model based on Solt (2020) and Claassen (2019). Using the same linear latent factor model for the observed group-specific item means, we introduce a country-by-item random effect that allows for differential item functioning in which the item difficulty or intercept of items asked multiple times in the same country over time is allowed to vary across countries. Thereby, we should be able to account for cross-country differences affecting all income groups in a given country that are merely a function of differences in the understanding of individual items. While not all items are asked multiple times in every country (i.e some items are of a "one-shot" nature and only appear in a single survey round for a given country), a model accounting for this possibility should still be able to reduce overall measurement error and to tackle the concerns raised by Gilens (2012). In addition, slightly more than half of the unique country-item combinations in our data occur more than once, thus providing a suitable data source for the model in question.

A caveat to note in the application of the results is that they may only control

Table 5: Model Results for Models in Changes Using Extreme Income Groups

	Welfare Generosity			OECD Social Spending			OECD Relative Redistribution		
	(1) (Change to t+2)	(2) (Change to t+2)	(3) (Change to t+2)	(4) (Change to t+2)	(5) (Change to t+2)	(6) (Change to t+2)	(7) (Change to t+2)	(8) (Change to t+2)	(9) (Change to t+2)
Constant	1.096* (.613)	1.559*** (.580)	1.564*** (.590)	2.257** (.970)	2.174*** (.828)	2.174*** (.828)	3.224*** (.907)	2.967*** (.927)	2.987*** (.954)
Low-Income Pref.		-.149 (.225)	-.169 (.265)		-.055 (.235)	-.346* (.198)		.249 (.535)	-.009 (.672)
Middle-Income Pref.	.447*** (.154)		.052 (.342)	.018 (.115)	.609 (.405)	.609 (.405)	.008 (.318)		.546 (.578)
High-Income Pref.		.466*** (.135)	.444** (.198)		-.047 (.147)	-.336 (.315)		-.275 (.367)	-.508 (.348)
N	156	156	156	389	389	389	189	189	189
R ²	.158	.187	.187	.532	.533	.539	.484	.486	.489
Adjusted R ²	.068	.093	.087	.512	.511	.516	.433	.431	.431

*p < .1; **p < .05; ***p < .01

Panel-Clustered standard errors based on Arellano (1987) in parentheses. Values rounded to the third integer. Non-binary covariates standardized and mean-centered. Controls not shown: GDP growth, Employment to Population Rate, Old age dependency ratio, GDP per capita, General government debt as for Market Inequality Gini. Models also include changes from t to t+2 of these variables.

Note:

for factors that are constant within items and countries over time (item-country intercepts, Claassen 2019: 5). Additional measurement error affecting all groups simultaneously that is not constant within items and countries over time, in contrast, is not accounted for. Table 6 displays the models from Table 2 that try to account for persistent country-item biases. By and large, these results are equivalent to the results in Table 2 and thus do not help to adjudicate between responsiveness to different groups.

Alternative Ways of Adjudicating between High and Low Incomes

As demonstrated in the previous analyses, determining the responsiveness to one group vis-à-vis the other income groups is difficult. Furthermore, the above results indicate that responsiveness, if anything, occurs with regard to the electorate as a whole. Nevertheless, it could be the case that conditional on overall or median public opinion, one group may be able to nudge public opinion in its preferred direction. Schakel et al. (2020) propose one way of testing for this possibility. Namely, they include models that condition on median preference (our in our case: the middle-income group) and additionally include the difference of high-income minus low-income preferences as a predictor. The logic behind their model is intuitive. Positive coefficients on the difference variable indicate that after accounting for responsiveness to overall opinion, high incomes exert additional influence to an extent greater than low-income preferences (as positive values indicate higher demand for redistribution in the high-income group) and vice versa. Moreover while the preference difference between high-income groups and low-income groups covaries with overall or middle-income group preferences (see Figure 3 in the Appendix) such that it is larger in contexts where citizens are overall less supportive of redistribution, this correlation is modest and multi-collinearity is much less of a problem in these models.

We thus replicate and extend this model specification to the additional dependent variables, the resulting models are presented in Table 7. However, we would like to caution readers about a potentially problematic aspect of these models not discussed by Schakel et al. (2020). Namely, the difference variable calculated in the manner described above might lead to a biased estimate of the relative influence of the two underlying groups as a difference between two variables will display a higher (absolute) correlation with the constituting variable that has a larger variance.³¹

³¹As an extreme example, consider two normally distributed variables, one with a standard deviation 10 times larger than the other. The absolute correlation between the difference and

Table 6: Model Results for Models Attempting to Reduce Correlated Measurement Error

	Welfare Generosity			OECD Social Spending			OECD Relative Redistribution		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)	(Change to t+2)
Constant	.920* (.555)	1.458*** (.554)	1.493*** (.561)	2.194** (.933)	2.200** (.904)	2.205** (.906)	3.042*** (.885)	2.817*** (.887)	2.793*** (.880)
Low-Income Pref.		-.453* (.260)	-.741** (.325)		-.061 (.221)	-.320 (.249)		.358 (.598)	-.423 (.812)
Middle-Income Pref.	.302*** (.106)		.510 (.434)	-.030 (.100)		.446 (.399)	.045 (.274)		1.301 (.830)
High-Income Pref.		.596*** (.190)	.380 (.295)		-.007 (.162)	-.213 (.285)		-.319 (.472)	-.891 (.581)
N	156	156	156	391	391	391	190	190	190
R ²	.139	.165	.174	.530	.531	.532	.473	.475	.482
Adjusted R ²	.047	.069	.072	.510	.509	.509	.421	.420	.424

*p < .1; **p < .05; ***p < .01

Note: Panel-Clustered standard errors based on Arellano (1987) in parentheses. Values rounded to the third integer. Non-binary covariates standardized and mean-centered. Controls not shown: GDP growth, Employment to Population Rate, Old age dependency ratio, GDP per capita, General government debt as % of GDP, decade dummies and a dummy for Euro-Zone membership. Models for Relative redistribution also control for Market Inequality Gini. Models also include changes from t to t+2 of these variables.

Hence, even if preferences are measured on the same scale and responsiveness to both groups is the same - a situation under which we would like the model to yield zero estimates - we can expect a bias towards the group whose preferences display larger variance. In our data (as in the data of Elkjær and Iversen 2020; Schakel et al. 2020), preferences of the high-income group are more variable than the preferences of those with lower incomes (see Table 10). We can thus a priori expect the model to slightly favor high-income interests over low-income interests even in the absence of any substantial difference in responsiveness to these groups. We include the middle-income group in all of these models, as polarization between income groups is larger in contexts where overall preferences are less supportive of redistribution, as evidenced by Figure 3 in the Appendix.

Yet, as can be seen, despite the a-priori bias in favor of the high-income group, the models do not consistently suggest this group to be dominant. While the model for the CWED welfare generosity replicates the results of Schakel et al. (2020) - i.e. a seeming dominance of the high-income groups - a similar pattern is not consistently found for the other variables. While a somewhat similar pattern is estimated in the model using social spending as the dependent variable and including fixed effects - a model which also yields an implausible negative coefficient for the middle-income group - the remaining models do not suggest a strong bias in favor of the high-income groups. On the other hand, none of the models suggest a responsiveness biased to low incomes.

5.4. Summary of Results

As has become clear in the the above results, adjudicating between the responsiveness to different income groups is difficult using our data and methodological approach. Despite a comparatively large sample size and a comprehensive approach with regard to measuring both citizen preferences and policy, many of the results above

the first variable, will be around .95, but only around .30 for the second variable. As a less extreme example, we can turn to simulations based on our data. Namely, we take the sample of country-years used in the models using welfare generosity as the dependent variable and simulate new values for the dependent variable using a model with all three income groups included (i.e. Model (3) in Table 2), but assume that the effect of each group's preferences is the same as the effect estimated for the middle-income group in Model (1) of Table 2. We thus assume equal representation. We then generate 1000 different data sets with the same values for the independent variables, but new simulated dependent variables and the same specification as in Model (1) of Table 6. On average, the coefficient on the difference variable in the resulting models is positive and amounts to around 30% of the (simulated) responsiveness coefficient for that group, despite low and high incomes being equally powerful in this simulated example.

Table 7: Model Results for Models with Difference of High- and Low-Income Preferences

	Welfare Generosity (Change to t+2)	Welfare Generosity (Levels at t+2,FE)	OECD Social Spending (Change to t+2)	OECD Social Spending (Levels at t+2,FE)	OECD Relative Redistribution (Change to t+2)	OECD Relative Redistribution (Levels at t+2,FE)
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	1.697*** (.629)		2.162*** (.596)		2.897*** (1.103)	
Middle-Income Pref.	-.297** (.142)	.042 (.491)	.020 (.123)	-.584 (.374)	.100 (.286)	-.575 (.502)
High - Low Inc Pref.	.456* (.254)	.156 (.649)	-.062 (.254)	.418 (.575)	-.254 (.570)	-.638 (.725)
N	156	156	391	391	190	190
R ²	.190	.368	.530	.334	.474	.243
Adjusted R ²	.097	.229	.509	.243	.419	.027

*p < .1; **p < .05; ***p < .01

Note: Panel-Clustered standard errors based on Arellano (1987) in parentheses. Values rounded to the third integer. Non-binary covariates standardized and mean-centered. Controls not shown: GDP growth, Employment to Population Rate, Old age dependency ratio, GDP per capita, General government debt as % of GDP, decade dummies and a dummy for Euro-Zone membership. Models for Relative redistribution also control for Market Inequality Gini. Models in Changes also control for changes in control variables.

were deemed inconclusive or varied strongly across models. Yet, before drawing a conclusion, we would like to point to some regularities that can be identified despite the concerns.

First, implausible negative coefficients estimated for the preferences of one group are observed across quite different model specifications and all dependent variables. Moreover, they are estimated for all of the income groups. Altogether, this represents a puzzle that needs further study, as it cannot easily be explained by theoretical models. While these also might represent a statistical anomaly resulting from multi-collinearity and possibly correlated measurement errors, purely methodological approaches designed to circumvent to alleviate the problem alone were not successful.

Second, despite these somewhat volatile results across model specifications, we wish to stress that there are nevertheless common elements linking all models. In particular and with regard to our hypothesis postulating an over-representation of high-income interests relative to low-income interests, it is important to note while some of the model results would imply disproportionate responsiveness to high-incomes or in some cases middle incomes, none of the models yielded a positive and significant responsiveness coefficient estimate for the group of low-income citizens. Rather, the low-income group across models was the group whose preferences most often yielded negative coefficients, which in addition most frequently were estimated significant, irrespective of whether equations are specified in levels or in changes. While we maintain that it remains very difficult to adjudicate between the responsiveness to different groups and that demonstrating overall responsiveness is difficult, the results do not provide evidence for any substantial positive responsiveness to the low-income group.

Third, comparing the low- and the high-income group across model specifications does not suggest any dominance for one group versus the other such that the results do not provide evidence for either a "Subversion of Democracy" or a "Middle-Class Supremacy" (Elkjær and Iversen 2020).

6. Conclusion

This paper set out to reconcile two seemingly conflicting recent findings in the cross-country comparative literature on unequal representation. While Schakel et al. (2020) conclude that welfare policy is dis-proportionally responsive to the preferences of higher income groups in society. Elkjær and Iversen (2020) argue that such findings are generally driven by an incidence of congruence in the short-term

budget preferences of high-income groups and policy experts, without any substantive responsiveness taking place. Rather, policy in the long run mainly responds to middle class interests.

Against the background of these seemingly conflicting findings, we intended to provide a more comprehensive analysis of the state of representation of different income groups in redistributive policy that a) examines both policy output and policy outcomes and that b) covers a more comprehensive sample of countries and years. To achieve the latter goal, we use a global, harmonized database of survey items tapping into preferences for income equality, redistribution and social spending and aggregate them using factor-analytic models for group-level policy preferences, thereby linking surveys with little to no overlap in their questionnaires, reducing the relative impact of measurement error stemming from single-item analyses used in previous research and putting the preferences of groups across countries and time on a comparable scale.

Yet, despite the increased and supposedly less error-prone measurement strategy and our comprehensive approach to measuring redistributive policy, we were not able to reconcile the conflicting findings discussed above. While both the findings of the above papers can be replicated using their original specification and data source, our analysis used a variety of model specifications and alternative dependent variables to show that these results are rather sensitive to these changes. Importantly, our results indicate that the findings are not robust to "sensible" changes, i.e. changes to model specifications, dependent variables and measurement strategies for which we have a priori no strong reason that would lead us to prefer one over the other. In sum, despite focusing on redistributive politics as a key dimension of conflict between income groups (Soroka and Wlezién 2008) and thus a likely case of potential inequalities in representation, our findings mirror the results of Donnelly and Lefkofridi (2014), as we also find no consistent overall responsiveness to public preferences (cf. also O'Grady and Abou-Chadi 2019) and no consistent bias in favor of any one group. The only somewhat consistent pattern is the absence of meaningful responsiveness to the interests of low-income groups across all the models and data sets featured in our analysis.

Yet, the results also highlighted particular problems in the analysis of unequal responsiveness that stem from the close correlation of redistributive preferences in different income groups across countries. Going forward, we believe that comparative research on inequality in representation needs to overcome statistical/methodological and conceptual hurdles. As for the methodological challenges, research strategies need

to able to distinguish between the highly correlated preferences across income groups and correlation induced by measurement errors affecting all groups simultaneously. Recent research on aggregating public opinion across time and space has equipped researchers with the necessary tools to do so (Claassen 2019; McGann 2014; Caughey and Warshaw 2015; Caughey et al. 2019; Solt 2020). Yet, at we believe that the leverage gained from more encompassing and less error-prone measurements and larger sample sizes alone is not sufficient. Rather, on a conceptual level, research needs to accommodate theoretical models that help make sense of a priori implausible findings such as "perverse representation" where policy responds negatively to shifts in public opinion. On that account, we applaud Elkjær and Iversen (2020) for discussing ways in which income groups react differently to macro-economic conditions and linking this theory to eventual model specifications (see also Kelly and Enns 2010). We believe that future research needs to be extended in that direction.

A. Additional Information and Models

A.1. Items used to Measure Group-Level Preferences

Description	Survey	Year
Placement on "Income should be made more equal" versus "There should be greater incentives for individual effort" (or similar, 10 categories)	WVS III, WVS IV, EVS 4, WVS VI, WVS II, EVS 2, EVS 3, WVS V	1989, 1990, 1991, 1992, 1993, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014
The government should take measures to reduce differences in income levels (5 categories)	ESS 6, CSES 4, ESS 3, ESS 4, ESS 5, ESS 8, ESS 1, ESS 2, ESS 7, ISSP RG V	2002, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
It is responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes. (5 categories)	ISSP SI IV, ISSP RG I, ISSP SI I, ISSP SI II, EB.52.1, ISSP SI III, EB.56.1, ISSP RG II, ISSP RG III, CB 2002.1, WVS IV	1985, 1986, 1987, 1988, 1990, 1991, 1992, 1993, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2008, 2009, 2010, 2011
On the whole, do you think it should be or should not be the governments responsibility to: Reduce income differences between the rich and poor (4 categories)	ISSP RG I, ISSP RG II, ISSP RG III, ISSP RG IV, ISSP RG V, PCP I, PCP II	1985, 1986, 1990, 1991, 1992, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2005, 2006, 2007, 2008, 2015, 2016, 2017, 2018
Which of these two statements comes closest to your own opinion? A. I find that both freedom and equality are important. But if I were to choose one or the other, I would consider personal freedom more important, that is, everyone can live in freedom and develop without hinderance. B. Certainly both freedom and equality are important. But if I were to choose one or the other, I would consider equality more important, that is, that nobody is underprivileged and that social class differences are not so strong.	EVS 4, WVS II, EVS 2, EVS 3, PCP II	1989, 1990, 1991, 1992, 1993, 1998, 1999, 2000, 2001, 2008, 2009
And now, could you please tell me which type of society this country you think this country SHOULD aim to be in the future. For each pair of statements, would you prefer being closer to the first or to the second alternative? 1) an egalitarian society where gap between rich and poor is small, regardless of achievement 2) a competitive society, where wealth is distributed according to one's achievements?	WVS IV	2000, 2001, 2002, 2003
Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Use this scale where 1 means "not at all an essential characteristic of democracy" and 10 means it definitely is "an essential characteristic of democracy": People receive state aid for unemployment.	WVS VI, WVS V	2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014
Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Use this scale where 1 means "not at all an essential characteristic of democracy" and 10 means it definitely is "an essential characteristic of democracy": The state makes people's incomes equal.	WVS VI	2010, 2011, 2012, 2013, 2014
Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Use this scale where 1 means "not at all an essential characteristic of democracy" and 10 means it definitely is "an essential characteristic of democracy": Governments tax the rich and subsidize the poor	WVS VI, WVS V	2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014
Suppose the level of taxation in country stays the same as it is now. Should the government: 0 = spend less than now on social services, so that the national deficit or debt can be reduced 1 = spend the same amount as now on social services even if this means the national deficit or debt stays as it is	ISSP RG III	1995, 1996, 1997, 1998

Please show how much you agree or disagree with this statement. The government should provide everyone with a guaranteed basic income (5 categories)	ISSP SI I, ISSP SI II, EB.56.1	1987, 1988, 1991, 1992, 1993, 2001
Please tell me how much you agree or disagree with each statement. The government should guarantee everyone a minimum standard of living. (5 categories)	ISJP 1, ISJP 2	1991, 1992, 1995, 1996
Please tell me how much you agree or disagree with each statement. The government should place an upper limit on the amount of money any one person can make. (5 categories)	ISJP 1, ISJP 2	1991, 1992, 1995, 1996
Please tell me how much you agree with this statement. The fairest way of distributing wealth and income would be to give everyone equal shares. (5 categories)	ISJP 1, ISJP 2	1991, 1992, 1995, 1996
Please tell me how much you agree with this statement. The most important thing is that people get what they need, even if this means allocating money from those who have earned more than they need. (5 categories)	ISJP 1, ISJP 2	1991, 1992, 1995, 1996
Please say how much you agree or disagree with each of the following statements. Large differences in people's incomes are acceptable to properly reward differences in talents and efforts. (5 categories)	ESS 4, ESS 8	2008, 2009, 2011, 2016, 2017
Please say how much you agree or disagree with each of the following statements. For a society to be fair, differences in people's standard of living should be small. (5 categories)	ESS 4, ESS 8	2008, 2009, 2011, 2016, 2017
Please tell me on a score of 0-10 how much responsibility you think governments should have. 0 means it should not be governments responsibility at all and 10 means it should be entirely governments responsibility. Provide paid leave from work for people who temporarily have to care for sick family members? (11 categories)	ESS 4	2008, 2009, 2011
Some people say that higher earners should get more benefit when they are temporarily unemployed because they paid more in tax, whilst others think that lower earners should get more because they are in greater need. Using this card, please tell me which of the three statements you agree with most? 0 = higher earners should get more in benefit. 1 = high and low earners same amount benefit 2 = lower earners should get more in benefit	ESS 4	2008, 2009, 2011
Using this card, please say how much you agree or disagree with each of the following statements about people in [country]. There are insufficient benefits in [country] to help the people who are in real need. (5 categories)	ESS 4	2008, 2009, 2011
Please tell me how much you agree with the following statement. 'The government should do more to prevent people falling into poverty'. (5 categories)	ESS 5	2010, 2011, 2013
And still thinking generally rather than about [country], how important do you think it is for democracy in general... ..that the government takes measures to reduce differences in income levels? (11 categories)	ESS 6	2012, 2013
Now imagine there is a fixed amount of money that can be spent on tackling unemployment. Would you be against or in favour of the government spending more on education and training programs for the unemployed at the cost of reducing unemployment benefit? (4 categories)	ESS 8	2016, 2017
Considering the money people earn from their work, do you think that there should be 0 = large differences 1 = some differences 2 = no differences	PCP I, PCP II	1990, 1991, 1998, 1999, 2000, 2001
Which of the following statements do you agree with more? 1 - Citizens should pay for their own medical care and medicine. 2 - The government should cover the costs of citizens medical care and medicine.	PCP I, PCP II	1990, 1991, 1992, 1998, 1999, 2000, 2001

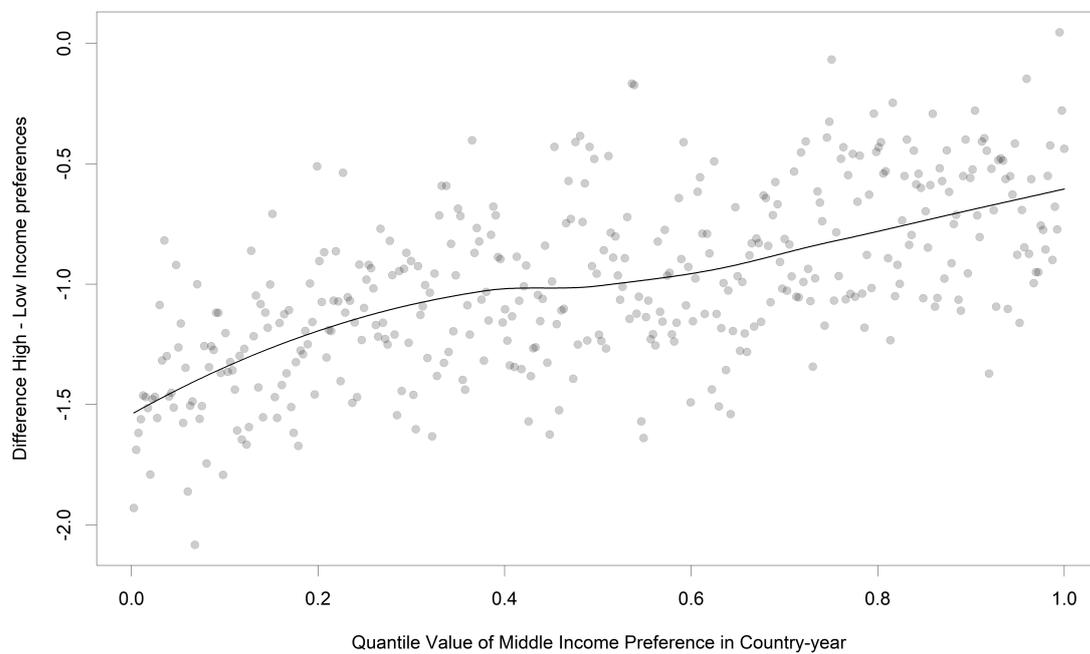
Which of the following statements do you agree with more? 1 - Instead of depending so much on the government, people should learn to take care of themselves. 2 - The government doesn't do enough to protect people from economic difficulties.	PCP I, PCP II	1990, 1991, 1992, 1998, 1999, 2000, 2001
Please tell me to what extent you agree or disagree with each of the following statements. In (NATIONALITY) society, the rich get richer and the poor get poorer (5 categories)	EB.52.1, EB.56.1, CB 2002.1	1999, 2001, 2002
Please tell me to what extent you agree or disagree with each of the following statements. Wide differences in income are not good for (NATIONALITY) society (5 categories)	EB.52.1, CB 2002.1	1999, 2002
Please tell me to what extent you agree or disagree with each of the following statements. The government has to guarantee the same opportunities (education, health, etc.) for everyone (5 categories)	EB.52.1, CB 2002.1	1999, 2002
Please tell me to what extent you agree or disagree with each of the following statements. The government should spend more on social welfare (5 categories)	EB.52.1, CB 2002.1	1999, 2002
Please tell me to what extent you agree or disagree with each of the following statements. There is not enough government support for poor or socially excluded people (5 categories)	EB.52.1, CB 2002.1	1999, 2002
For each of the following statements, please tell me whether you agree or disagree. The Government should ensure that the wealth of the country is redistributed in a fair way to all citizens. (4 categories)	EB 72.1, EB 74.1	2009, 2010
For each of the following statements, please tell me whether you agree or disagree. People who are well-off should pay higher taxes so the Government has more means to fight poverty (4 categories)	EB 72.1, EB 74.1	2009, 2010
Individuals should take more responsibility for providing for themselves vs The state should take more responsibility to ensure that everyone is provided for (10 categories)	WVS III, WVS IV, EVS 4, WVS VI, WVS II, EVS 2, EVS 3, WVS V	1989, 1990, 1991, 1992, 1993, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014
And which of these two statements comes closest to your view? 1. The Government should take more responsibility to ensure that everyone is provided for 2. It depends (SPONTANEOUS) 3. People should take more responsibility to provide for themselves (3 categories)	EB 72.1, EB 74.1	2009, 2010
On the whole, do you think it should be or should not be the governments responsibility to: provide a decent standard of living for the old (4 categories)	ISSP RG I, ISSP RG II, ISSP RG III, ISSP RG IV, ISSP RG V, PCP I, PCP II	1985, 1986, 1990, 1991, 1992, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2005, 2006, 2007, 2008, 2015, 2016, 2017, 2018
Now I'd like you to tell me your views on various issues. How would you place your views on this scale? Each individual should be responsible for arranging his or her own pension vs the state should be responsible for everyone's pension (10 categories)	EVS 3	1999, 2000, 2001
Please tell me on a scale of 0-10 how much responsibility you think governments should have. 0 means it should not be governments' responsibility at all and 10 means it should be entirely governments' responsibility. Ensure a reasonable standard of living for the old? (11 categories)	ESS 3, ESS 4, ESS 8	2006, 2007, 2008, 2009, 2011, 2016, 2017
How would you place your views on this scale? The individual should be responsible for arranging his or her own housing vs the state should be responsible for everyone's housing (10 categories)	EVS 3	1999, 2000, 2001
How much do you agree with the following statement? The government should provide decent housing for all who cannot afford it (5 categories)	EB.56.1	2001
On the whole, do you think it should be or not be the governments responsibility to provide decent housing for those who cant afford it? (4 categories)	ISSP RG III, ISSP RG IV, ISSP RG V	1995, 1996, 1997, 1998, 2005, 2006, 2007, 2008, 2015, 2016, 2017, 2018

In order to be considered just, what should a society provide? Please tell me for each statement if it is important or unimportant to you. Eliminating big inequalities in income between citizens (5 categories)	EVS 3	1999, 2000, 2001
Please put the items on this card into three groups according to their importance in life. In the first group, please put the most important items, into the second the rather important ones and into the third group those, which are not important): "There should be no big income differences" (PCP) (3 categories)	PCP II	1998, 1999, 2000, 2001
Do you think that people with high incomes should pay a larger share of their income in taxes than those with low incomes, the same share or a smaller share (5 categories)	ISSP SI IV, ISSP SI I, ISSP SI II, ISSP SI III	1987, 1988, 1991, 1992, 1993, 1998, 1999, 2000, 2001, 2008, 2009, 2010, 2011
Some people think those with high income should pay a larger proportion (percentage) of their earnings in taxes than those who earn low incomes. Other people think that those with high income and those with low income should pay the same proportion (percentage) of their earning in taxes. Do you think those with high incomes should pay a much smaller-much larger proportion (5 categories)	ISSP RG I, ISSP RG II	1985, 1986, 1990, 1991
On the whole, do you think it should be or should not be the governments responsibility to: Provide a job for everyone who wants one (4 categories)	ISSP RG I, ISSP RG II, ISSP RG III, ISSP RG IV, ISSP RG V, PCP I, PCP II	1985, 1986, 1990, 1991, 1992, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2005, 2006, 2007, 2008, 2015, 2016, 2017, 2018
Please tell me how much you agree or disagree with each statement. The government should provide a job for everyone who wants one. (5 categories)	ISSP SI I, ISSP SI II, EB.56.1, ISJP 1, ISJP 2	1987, 1988, 1991, 1992, 1993, 1995, 1996, 2001
People think differently on what steps should be taken to help solving social and economic problems in (OUR COUNTRY). I'm going to read you two contradictory statements on this topic. Please tell me which one comes closest to your view. 1. It is primarily up to the Government to provide jobs for the unemployed 2. It depends (SPONTANEOUS) 3. Providing jobs should rest primarily on private companies and markets in general	EB 72.1, EB 74.1	2009, 2010
Please tell me on a score of 0-10 how much responsibility you think governments should have. 0 means it should not be governments' responsibility at all and 10 means it should be entirely governments' responsibility. To ensure a job for everyone who wants one? (11 categories)	ESS 4	2008, 2009, 2011
On the whole, do you think it should be or should not be the governments responsibility to: provide health care for the sick (4 categories)	ISSP RG I, ISSP RG II, ISSP RG III, ISSP RG IV, ISSP RG V, PCP I, PCP II	1985, 1986, 1990, 1991, 1992, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2005, 2006, 2007, 2008, 2015, 2016, 2017, 2018
Please show how much you agree or disagree with each of the following statements: The government should provide a decent standard of living for the unemployed (5 categories)	ISSP SI IV, ISSP SI I, ISSP SI II, EB.56.1	1987, 1988, 1991, 1992, 1993, 2001, 2008, 2009, 2010, 2011
On the whole, do you think it should be or should not be the governments responsibility to: provide a decent standard of living for the unemployed (4 categories)	ISSP RG I, ISSP RG II, ISSP RG III, ISSP RG IV, ISSP RG V, PCP I, PCP II	1985, 1986, 1990, 1991, 1992, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2005, 2006, 2007, 2008, 2015, 2016, 2017, 2018
please tell me on a score of 0-10 how much responsibility you think governments should have. 0 means it should not be governments' responsibility at all and 10 means it should be entirely governments' responsibility. To ensure a reasonable standard of living for the unemployed? (11 categories)	ESS 4, ESS 8	2008, 2009, 2011, 2016, 2017
Please show how much you agree or disagree with this statement. The government should provide more chances for children from poor families to go to university (5 categories)	ISSP SI I, ISSP SI II	1987, 1988, 1991, 1992, 1993
On the whole, do you think it should be or not be the governments responsibility to give financial help to university students from low-income families (4 categories)	ISSP RG III, ISSP RG IV, ISSP RG V	1995, 1996, 1997, 1998, 2005, 2006, 2007, 2008, 2015, 2016, 2017, 2018

Some people earn a lot of money while others do not earn very much at all. In order to get people to work hard, do you think large differences in pay are necessary or not necessary? (4 categories)	ISSP SI I, ISSP SI II	1987, 1988, 1991, 1992, 1993
For each of the following statements, please tell me whether you agree or disagree: Income inequalities are necessary for economic development (4 categories)	EB 72.1, EB 74.1	2009, 2010
Tell me to what extent you agree or disagree with this statement: It is all right if businessmen make good profits because everyone benefits in the end. (5 categories)	ISJP 1, ISJP 2	1991, 1992, 1995, 1996
Please show how much you agree or disagree with each statement. Differences in income in country are too large. (5 categories)	ISSP SI IV, ISSP SI I, ISSP SI II, EB.52.1, ISSP SI III, EB.56.1, CB 2002.1	1987, 1988, 1991, 1992, 1993, 1998, 1999, 2000, 2001, 2002, 2008, 2009, 2010, 2011
For each of the following statements, please tell me whether you agree or disagree. Nowadays in (OUR COUNTRY) income differences between people are far too large. (4 categories)	EB 72.1, EB 74.1	2009, 2010
What do you think about the difference in incomes people have in COUNTRY [EG,WG: in your part of COUNTRY]? Are the differences much too large, somewhat too large, about right, somewhat too small, or much too small? (5 categories)	ISJP 1, ISJP 2	1991, 1992, 1995, 1996
Which of the following statements do you agree with more? 1 - There should be no limits on the amount of money one is able to earn. 2 - It is necessary to place limits on the amount of money that one can earn (3 categories)	PCP II	1998, 1999, 2000, 2001
Generally, how would you describe taxes in country? (We mean all taxes together, including national insurance/social security), income tax, VAT/Sales tax and all the rest.) First, for those with high incomes, are taxes too high or too low? (5 categories)	ISSP SI IV, ISSP SI I, ISSP SI II, ISSP RG III, ISSP RG IV, ISSP RG V	1987, 1988, 1991, 1992, 1993, 1995, 1996, 1997, 1998, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2015, 2016, 2017, 2018
Listed below are various areas of government spending. Please show whether you would like to see more or less government spending in each area. Remember that if you say "much more", it might require a tax increase to pay for it. More or less government spending for: unemployment benefits (5 categories)	ISSP RG I, CSES 4, ISSP RG II, ISSP RG III, ISSP RG IV, ISSP RG V	1985, 1986, 1990, 1991, 1995, 1996, 1997, 1998, 2005, 2006, 2007, 2008, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018
Listed below are various areas of government spending. Please show whether you would like to see more or less government spending in each area. Remember that if you say "much more", it might require a tax increase to pay for it. More or less government spending for: old age pensions (5 categories)	CSES 4, ISSP RG I, ISSP RG II, ISSP RG III, ISSP RG IV, ISSP RG V	1985, 1986, 1990, 1991, 1995, 1996, 1997, 1998, 2005, 2006, 2007, 2008, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018
Thinking about public expenditure on WELFARE BENEFITS, should there be much more than now, somewhat more than now, the same as now, somewhat less than now, or much less than now? (5 categories)	CSES 4	2011, 2012, 2013, 2014, 2015, 2016

Note: Survey acronyms used are as follows: AB = Americas Barometer; CB = Candidate Barometer; CSES = Comparative Study of Electoral Systems; EB = Eurobarometer; ESS = European Social Survey; EVS = European Values Survey; ISJP = International Social Justice Project; ISSP = International Social Survey Programme; PCP = Post-Communist Publics Study; WVS = World Values Survey

Figure 3: Middle-Income Preferences and High-Low-Income Polarization



Note: Figure depicts the quantile value of the middle-income preference estimate (x-axis) against the difference of high-income preferences minus low-income preferences for a given country-year (y-axis). Dots are individual country-years, the solid line is the loess fit. Country-years appearing in any one of the analyses displayed.

Table 9: Country-Years covered in Analysis

Country	Year
AT	1986 ^b ; 1988 ^b ; 1990 ^{ab} ; 1993 ^{ab} ; 1999 ^{ab} ; 2000 ^{ab} ; 2001 ^{ab} ; 2007 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2013 ^{ac} ; 2016 ^a
AU	1986 ^{ab} ; 1987 ^{ab} ; 1990 ^{ab} ; 1993 ^{ab} ; 1995 ^{ab} ; 1997 ^{ab} ; 2000 ^{ab} ; 2005 ^{ab} ; 2007 ^{ab} ; 2010 ^{ac} ; 2012 ^{ac} ; 2013 ^a ; 2016 ^c
BE	1990 ^{ab} ; 1999 ^{ab} ; 2001 ^{ab} ; 2006 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2012 ^{ac} ; 2016 ^a
BG	2006 ^{ac} ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2013 ^{ac} ; 2015 ^c
CA	1990 ^{abc} ; 1992 ^{abc} ; 1996 ^{abc} ; 2000 ^{abc} ; 2006 ^{abc} ; 2011 ^{ac} ; 2015 ^{ac}
CH	1996 ^{ab} ; 1998 ^{ab} ; 1999 ^{ab} ; 2006 ^{abc} ; 2007 ^{abc} ; 2008 ^{abc} ; 2010 ^{ac} ; 2011 ^{ac} ; 2012 ^{ac} ; 2016 ^a
CL	1990 ^a ; 1996 ^a ; 2000 ^a ; 2006 ^a ; 2009 ^{ac} ; 2011 ^{ac}
CY	2002 ^a ; 2006 ^a ; 2008 ^a ; 2009 ^a ; 2010 ^a ; 2011 ^a ; 2012 ^a
CZ	1995 ^a ; 1996 ^a ; 1998 ^a ; 1999 ^a ; 2001 ^a ; 2002 ^{ac} ; 2006 ^{ac} ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2013 ^{ac} ; 2016 ^a
DE	1985 ^{ab} ; 1987 ^{ab} ; 1990 ^{ab} ; 1991 ^{ab} ; 1992 ^{ab} ; 1996 ^{ab} ; 1997 ^{ab} ; 1999 ^{ab} ; 2000 ^{ab} ; 2001 ^{ab} ; 2006 ^{ab} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2013 ^{ac} ; 2016 ^a
DK	1990 ^{ab} ; 1999 ^{ab} ; 2001 ^{ab} ; 2006 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2013 ^{ac} ; 2016 ^a
EE	1999 ^a ; 2001 ^a ; 2002 ^a ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2012 ^{ac} ; 2016 ^a
ES	1990 ^{ab} ; 1995 ^{ab} ; 1996 ^{ab} ; 1999 ^{ab} ; 2000 ^{ab} ; 2001 ^{ab} ; 2006 ^{ab} ; 2007 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2013 ^{ac} ; 2016 ^a
FI	1990 ^{abc} ; 1996 ^{abc} ; 1999 ^{abc} ; 2000 ^{abc} ; 2001 ^{abc} ; 2005 ^{abc} ; 2006 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2015 ^{ac} ; 2016 ^a
FR	1990 ^{ab} ; 1997 ^{ab} ; 1999 ^{ab} ; 2001 ^{ab} ; 2006 ^{ab} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2013 ^{ac} ; 2016 ^a
GB	1985 ^{ab} ; 1987 ^{ab} ; 1990 ^{ab} ; 1991 ^{ab} ; 1992 ^{ab} ; 1996 ^{ab} ; 1999 ^{abc} ; 2001 ^{abc} ; 2005 ^{abc} ; 2006 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2015 ^{ac} ; 2016 ^a
GR	1999 ^{ab} ; 2001 ^{ab} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2013 ^{ac} ; 2015 ^{ac}
HR	2008 ^a ; 2009 ^a ; 2011 ^a
HU	1999 ^a ; 2002 ^a ; 2006 ^{ac} ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2016 ^a
IE	1990 ^{ab} ; 1991 ^{ab} ; 1996 ^{ab} ; 1999 ^{ab} ; 2001 ^{ab} ; 2005 ^{abc} ; 2007 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2013 ^{ac}
IL	1996 ^a ; 1999 ^a ; 2001 ^a ; 2007 ^a ; 2008 ^{ac} ; 2009 ^{ac} ; 2011 ^{ac} ; 2012 ^{ac} ; 2013 ^{ac} ; 2016 ^c
IS	1999 ^a ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2013 ^{ac}
IT	1985 ^{ab} ; 1987 ^{ab} ; 1990 ^{ab} ; 1992 ^{ab} ; 1996 ^{ab} ; 1999 ^{ab} ; 2001 ^{ab} ; 2005 ^{ab} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2013 ^{ac}
JP	1990 ^{ab} ; 1991 ^{ab} ; 1995 ^{ab} ; 1996 ^{ab} ; 1999 ^{ab} ; 2000 ^{ab} ; 2005 ^{ab} ; 2006 ^{ab} ; 2009 ^a ; 2010 ^a ; 2013 ^a
KR	1990 ^a ; 1996 ^a ; 2001 ^a ; 2005 ^a ; 2006 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac}
LT	1997 ^a ; 1999 ^a ; 2001 ^a ; 2002 ^a ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2013 ^{ac} ; 2016 ^a
LU	1999 ^a ; 2001 ^a ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac}
LV	1998 ^a ; 1999 ^a ; 2002 ^a ; 2007 ^{ac} ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2014 ^{ac} ; 2016 ^a
MT	1999 ^a ; 2002 ^a ; 2008 ^a ; 2009 ^a ; 2010 ^a
MX	2000 ^a ; 2005 ^a
NL	1987 ^{ab} ; 1990 ^{ab} ; 1991 ^{ab} ; 1996 ^{ab} ; 1999 ^{ab} ; 2001 ^{ab} ; 2006 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2016 ^a
NO	1990 ^{ab} ; 1992 ^{ab} ; 1996 ^{ab} ; 1999 ^{ab} ; 2001 ^{ab} ; 2006 ^{ab} ; 2007 ^{ab} ; 2008 ^{abc} ; 2010 ^{ac} ; 2012 ^{ac} ; 2013 ^{ac} ; 2016 ^a
NZ	1992 ^{ab} ; 1997 ^{ab} ; 1998 ^{ab} ; 1999 ^{ab} ; 2004 ^{ab} ; 2006 ^{ab} ; 2009 ^a ; 2011 ^a
PL	1991 ^a ; 1992 ^a ; 1997 ^a ; 1999 ^a ; 2000 ^a ; 2002 ^a ; 2005 ^{ac} ; 2006 ^{ac} ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2012 ^{ac} ; 2016 ^a
PT	1990 ^a ; 1999 ^{ab} ; 2001 ^{ab} ; 2006 ^{abc} ; 2007 ^{abc} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2013 ^{ac} ; 2015 ^{ac}
RO	2002 ^a ; 2005 ^a ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2014 ^c
SE	1990 ^{ab} ; 1991 ^{ab} ; 1996 ^{ab} ; 1999 ^{ab} ; 2001 ^{ab} ; 2006 ^{ab} ; 2008 ^{abc} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2012 ^{ac} ; 2014 ^{ac} ; 2016 ^a
SI	1995 ^a ; 1998 ^a ; 1999 ^a ; 2002 ^a ; 2005 ^{ac} ; 2006 ^{ac} ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2011 ^{ac} ; 2012 ^{ac} ; 2015 ^{ac} ; 2016 ^a
SK	1998 ^a ; 1999 ^a ; 2001 ^a ; 2002 ^a ; 2007 ^{ac} ; 2008 ^{ac} ; 2009 ^{ac} ; 2010 ^{ac} ; 2012 ^{ac} ; 2016 ^a
US	1985 ^{ab} ; 1987 ^{ab} ; 1990 ^{ab} ; 1991 ^{ab} ; 1992 ^{ab} ; 1995 ^{ab} ; 1996 ^{ab} ; 1999 ^{ab} ; 2000 ^{ab} ; 2006 ^{ab} ; 2010 ^{ac} ; 2011 ^{ac} ; 2012 ^{ac} ; 2016 ^a

Note: Table displays the Country-years covered in the analyses using the different dependent variables. Cases enter in the analyses if they have data for our preference estimate, the levels of the dependent variable and the control variables at t and $t+2$. Furthermore, we limit our analyses to country-years observed at least twice under the above restrictions.

^a Country-year used in Analysis of OECD Social Spending

^b Country-year used in Analysis of CWED Welfare Generosity

^c Country-year used in Analysis of OECD relative redistribution

Table 10: Descriptive Statistics

Variable	Mean	SD	Within Country SD	25%	75%	Min	Max
Middle-Income Pref.	-0.184	0.880	0.267	-0.682	0.511	-2.502	1.482
Low-Income Pref.	0.218	0.768	0.267	-0.276	0.817	-1.635	1.723
High-Income Pref.	-0.779	1.007	0.272	-1.439	0.015	-3.326	1.344
OECD Social Spending (share of GDP)	20.657	5.250	2.397	17.087	24.291	2.912	32.115
CWED Welfare Generosity	31.553	6.640	1.504	26.200	36.250	19.900	45.700
OECD Relative Redistribution	35.561	8.872	1.936	30.400	42.425	6.175	53.814
GDP growth	2.026	3.375	3.181	0.823	3.933	-14.839	10.832
Oldage Dependency Ratio	22.571	4.841	2.568	19.138	25.911	7.548	39.586
Debt	56.449	34.678	17.474	33.560	71.574	4.504	232.469
Employment to population ratio	54.963	6.161	2.606	50.630	59.080	38.010	75.550
GDP per Capita	33802.466	19274.453	5046.513	18201.131	44393.626	5510.618	108577.351
Gini Market Inequality	47.343	4.758	1.485	44.125	50.700	33.000	57.900
Eurozone-Membership	0.327	0.470	0.301	0.000	1.000	0.000	1.000

Note: Table displays the descriptive statistics for the dependent variables, preference variables and control variables in the subsamples analyzed for the country-years appearing in either one of the analyses using Welfare Generosity, OECD Social Spending or Relative Redistribution (all households) as the dependent variable

Table 11: Model Results for Models in Levels at t+2 without Fixed effects

	Welfare Generosity (Levels at t+2)	Nonelderly Generosity (Levels at t+2)	Social Spending (Levels at t+2)	Nonelderly Spending (Levels at t+2)	Relative Redist (Levels at t+2)	Nonelderly Redist (Levels at t+2)
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	34.220*** (2.387)	20.299*** (2.171)	18.334*** (2.295)	8.712*** (1.472)	32.081*** (5.703)	26.327*** (5.822)
Low-Income Pref.	-2.868 (3.211)	-.082 (2.730)	-2.251 (1.758)	.789 (1.568)	5.076 (5.420)	2.900 (5.567)
Middle-Income Pref.	6.823*** (3.441)	3.309 (3.214)	4.736*** (1.948)	1.917 (1.673)	7.596 (4.904)	6.692 (4.588)
High-Income Pref.	-1.562 (2.171)	-1.958 (1.437)	-2.753* (1.542)	-2.854*** (.958)	-10.909*** (4.272)	-8.475*** (4.017)
N	156	178	391	334	190	190
R ²	.597	.636	.567	.489	.368	.322
Adjusted R ²	.566	.612	.554	.470	.325	.276

*p < .1; **p < .05; ***p < .01

Note: Panel-Clustered standard errors based on Arellano (1987) in parentheses. Values rounded to the third integer. Non-binary covariates standardized and mean-centered. Controls not shown: GDP growth, Employment to Population Rate, Old age dependency ratio, GDP per capita, General government debt as % of GDP, decade dummies and a dummy for Euro-Zone membership. Models for Relative redistribution also control for Market Inequality Gini.

Table 12: Model Results for Prais-Winsten Regressions of Policy level at t

	Welfare Generosity (1)	Welfare Generosity (2)	OECD Social Spending (3)	OECD Social Spending (4)	OECD Relative Redistribution (5)	OECD Relative Redistribution (6)
	Levels at t	Levels at t, FE	Levels at t	Levels at t, FE	Levels at t	Levels at t, FE
Low Income Pref.	-4.645* (2.766)	-1.635* (0.981)	-0.320 (1.114)	-0.255 (0.706)	0.906 (2.425)	1.556 (0.970)
Middle Income Pref.	11.644*** (2.670)	1.313 (1.009)	2.961** (1.219)	0.779 (0.764)	3.886 (2.858)	-1.269 (1.054)
High Income Pref.	-4.659*** (1.699)	-0.460 (0.748)	-2.801*** (0.852)	-0.866 (0.608)	-3.517* (2.002)	0.117 (0.825)
Constant	29.280*** (2.238)	32.104*** (0.743)	16.598*** (1.520)	23.280*** (0.820)	36.026*** (3.111)	45.023*** (0.939)
N	156	156	391	391	190	190
R ²	0.716	0.966	0.641	0.884	0.684	0.960

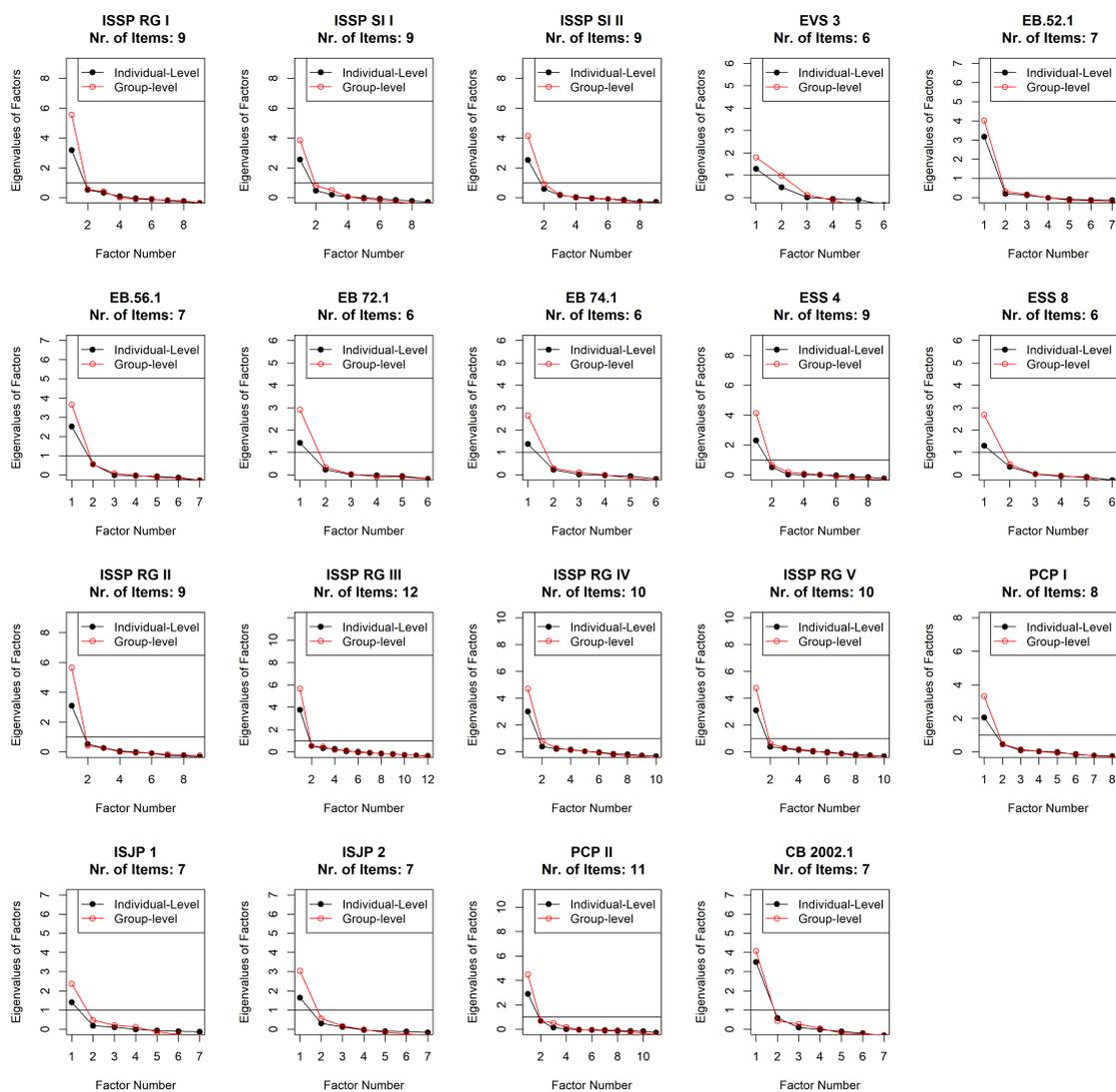
Note: Model displays results of Prais-Winsten Regression analysis replicating the Models in Elkjær and Iversen (2020). Heteroskedasticity-robust standard errors in parentheses. All models include decade dummies. values rounded to the third integer

B. Dimensionality of the Survey Data

We here rely on a simple test to analyze the dimensionality of the response patterns to the items used in our analysis. To do so, we separately analyze all survey data sets that contain at least six of the items covered by our measurement approach and subject each to two factor analyses. The first one is run at the individual level (across all countries in the respective survey), the second one is performed after calculating means by country, age categories (<25,25-64,65+, not available in all surveys), gender (2 categories) and the three income groups utilized in our analysis.³² We extract the Eigenvalues for the individual-level and the group-level analyses and display them in Figure 4. Following the famous Kaiser (1960) criterion for all surveys suggests that at both levels, only the first factor has an eigenvalue greater than one and hence explains more of the variance than that of a single item. Hence, most of the surveys can reasonably be approximated by a uni-dimensional model. In almost every case, the eigenvalue for the second factor is well below the threshold of one. However, Figure 4 also suggests that the first factor typically captures only a small part of the variation and hence only provides a somewhat limited summary of the data. This is especially true at the individual-level, whereas the group-level analysis yields somewhat higher eigenvalues. Hence, we can conclude that a uni-dimensional approximation to the survey data is typically plausible and that at the group-level, such a uni-dimensional approximation in addition summarizes a large portion of the variation in the raw survey data.

³²We only apply this second factor analysis to group-level data sets that contain more than 100 observations.

Figure 4: Eigenvalues of Factors Extracted from Individual Surveys



Note: Depicts the Eigenvalues of factors extracted by applying factor analysis to the individual surveys used in our analysis, either at the individual level (black solid dots and lines) or at the group-level using averages for the groups mentioned in Section B. Horizontal solid line marks and Eigenvalue of 1, the threshold used by the Kaiser (1960) criterion. Survey acronyms: AB = Americas Barometer; CB = Candidate Barometer; CSES = Comparative Study of Electoral Systems; EB = Eurobarometer; ESS = European Social Survey; EVS = European Values Survey; ISJP = International Social Justice Project; ISSP = International Social Survey Programme; PCP = Post-Communist Publics Study; WVS = World Values Survey

References

- Abbas, SM, Nazim Belhocine, Asmaa A ElGanainy and Mark Horton (2010): “A historical public debt database”. *IMF working papers*, pp. 1–26.
- Abbas, SM Ali, Nazim Belhocine, Asmaa El-Ganainy and Mark Horton (2011): “Historical patterns and dynamics of public debt—evidence from a new database”. *IMF Economic Review* 59(4), pp. 717–742.
- Achen, Christopher H (1985): “Proxy variables and incorrect signs on regression coefficients”. *Political Methodology*, pp. 299–316.
- Alexiadou, Despina (2019): “Cabinet Ministers and Inequality”. *Unpublished Manuscript*.
- Ansolabehere, Stephen, Jonathan Rodden and James M Snyder (2008): “The strength of issues: Using multiple measures to gauge preference stability, ideological constraint, and issue voting”. *American Political Science Review* 102(2), pp. 215–232.
- Arellano, Manuel (1987): “Practitioners’ Corner: Computing robust standard errors for within-groups estimators”. *Oxford bulletin of Economics and Statistics* 49(4), pp. 431–434.
- Armingeon, Klaus, Virginia Wenger, Fiona Wiedemeier, Christian Isler, Laura Knöpfel, David Weisstanner and Sarah Engler (2018): *Comparative Political Data Set 1960-2016*. Institute of Political Science, University of Berne. URL: <http://www.cpbs-data.org/>.
- Bartels, Larry M. (2008): *Unequal Democracy: The Political Economy of the New Gilded Age*. Princeton University Press.
- Bartels, Larry M. (2017): “The social welfare deficit: public opinion, policy responsiveness, and political inequality in affluent democracies”. *Unpublished Manuscript*.
- Becher, Michael and Daniel Stegmüller (2021): “Reducing Unequal Representation: The Impact of Labor Unions on Legislative Responsiveness in the U.S. Congress”. *Perspectives on Politics* 19(1), pp. 92–109.
- Beramendi, Pablo and Philipp Rehm (2016): “Who gives, who gains? Progressivity and Preferences”. *Comparative Political Studies* 49(4), pp. 529–563.
- Beyer, Daniela and Miriam Hänni (2018): “Two Sides of the Same Coin? Congruence and Responsiveness as Representative Democracy’s Currencies”. *Policy Studies Journal* 46, S13–S47.
- Branham, J Alexander, Stuart N Soroka and Christopher Wlezien (2017): “When do the rich win?”: *Political Science Quarterly* 132(1), pp. 43–63.

- Breunig, Christian and Marius Busemeyer (2012): “Fiscal austerity and the trade-off between public investment and social spending”. *Journal of European Public Policy* 19(6), pp. 921–938.
- Breznau, Nate (2019): “The underlying Public Attitude Toward Government Responsibility to Intervene in Socioeconomics, 30 Years of Evidence from the ISSP”. *International Journal of Sociology* 49(3), pp. 182–203.
- Broockman, David E and Christopher Skovron (2018): “Bias in perceptions of public opinion among political elites”. *American Political Science Review* 112(3), pp. 542–563.
- Carnes, Nicholas (2013): *White-collar government: The hidden role of class in economic policy making*. University of Chicago Press.
- Carnes, Nicholas and Noam Lupu (2015): “Rethinking the comparative perspective on class and representation: Evidence from Latin America”. *American Journal of Political Science* 59(1), pp. 1–18.
- Carpenter, Bob, Andrew Gelman, Matthew D Hoffman, Daniel Lee, Ben Goodrich, Michael Betancourt, Marcus Brubaker, Jiqiang Guo, Peter Li and Allen Riddell (2017): “Stan: A probabilistic programming language”. *Journal of statistical software* 76(1).
- Caughey, Devin, Tom O’Grady and Christopher Warshaw (2019): “Policy Ideology in European Mass Publics, 1981-2016”. *American Political Science Review*, pp. 1–20.
- Caughey, Devin and Christopher Warshaw (2015): “Dynamic estimation of latent opinion using a hierarchical group-level IRT model”. *Political Analysis* 23(2), pp. 197–211.
- Cavaillé, Charlotte and Kris-Stella Trump (2014): “The two facets of social policy preferences”. *The Journal of Politics* 77(1), pp. 146–160.
- Claassen, Christopher (2019): “Estimating Smooth Country–Year Panels of Public Opinion”. *Political Analysis* 27(1), pp. 1–20.
- Commission, European (2016): *Candidate Countries Eurobarometer 2002.1 (Social Situation in the Countries Applying for European Union Membership)*. Data file. URL: <http://dx.doi.org/10.4232/1.12511>.
- Croissant, Yves and Giovanni Millo (2008): “Panel Data Econometrics in R: The plm Package”. *Journal of Statistical Software* 27(2), pp. 1–43.
- Cusack, Thomas, Torben Iversen and Philipp Rehm (2006): “Risks at work: The demand and supply sides of government redistribution”. *Oxford Review of Economic Policy* 22(3), pp. 365–389.

- De Boef, Suzanna and Luke Keele (2008): “Taking time seriously”. *American Journal of Political Science* 52(1), pp. 184–200.
- Donnelly, Michael and Zoe Lefkofridi (2014): “Unequal policy responsiveness in Europe”. *Unpublished Manuscript*.
- Downs, Anthony (1957): “An Economic Theory of Political Action in a Democracy”. *Journal of Political Economy* 65(2), pp. 135–150.
- Elkjær, Mads Andreas and Torben Iversen (2020): “The Political Representation of Economic Interests: Subversion of Democracy or Middle-Class Supremacy?”. *World Politics* 72(2), pp. 254–290.
- Ellis, Christopher (2012): “Understanding economic biases in representation: Income, resources, and policy representation in the 110th House”. *Political Research Quarterly* 65(4), pp. 938–951.
- Elsässer, Lea, Svenja Hense and Armin Schäfer (2018): *Government of the People, by the Elite, for the Rich: Unequal Responsiveness in an Unlikely Case*. Tech. rep. MPIfG Discussion Paper.
- Enns, Peter (2015): “Relative Policy Support and Coincidental Representation”. *Perspectives on Politics* 13, pp. 1053–1064.
- Erikson, Robert S and Yosef Bhatti (2011): “How poorly are the poor represented in the US Senate?”. *Who gets represented*. Ed. by Peter Enns and Christopher Wlezien. Russell Sage New York, pp. 223–46.
- Esping-Andersen, Gosta (1990): *The three worlds of welfare capitalism*. Princeton University Press.
- ESS (2002): *ESS Round 1: European Social Survey Round 1 Data*. Data file. URL: doi: 10.21338/NSD-ESS2-2002.
- ESS (2004): *ESS Round 2: European Social Survey Round 6 Data*. Data file. URL: doi: 10.21338/NSD-ESS2-2004.
- ESS (2006): *ESS Round 3: European Social Survey Round 3 Data*. Data file. URL: doi: 10.21338/NSD-ESS3-2006.
- ESS (2008): *ESS Round 4: European Social Survey Round 4 Data*. Data file. URL: doi: 10.21338/NSD-ESS4-2008.
- ESS (2010): *ESS Round 5: European Social Survey Round 5 Data*. Data file. URL: doi: 10.21338/NSD-ESS5-2010.

- ESS (2012): *ESS Round 6: European Social Survey Round 6 Data*. Data file. URL: doi: 10.21338/NSD-ESS6-2012.
- ESS (2014): *ESS Round 7: European Social Survey Round 7 Data*. Data file. URL: doi: 10.21338/NSD-ESS7-2014.
- ESS (2016): *ESS Round 8: European Social Survey Round 8 Data*. Data file. URL: doi: 10.21338/NSD-ESS8-2016.
- EU-Commission (2012a): *Eurobarometer 52.1 (November-December 1999)*. Data file. URL: <https://doi.org/10.4232/1.11377>.
- EU-Commission (2012b): *Eurobarometer 56.1 (Sept-Oct 2001)*. Data file. URL: <http://dx.doi.org/10.4232/1.11378>.
- EU-Commission (2012c): *Eurobarometer 72.1 (Aug-Sep 2009)*. Data file. URL: <http://dx.doi.org/10.4232/1.11136>.
- EU-Commission (2013): *Eurobarometer 74.1 (8-9 2010)*. Data file. URL: <http://dx.doi.org/10.4232/1.11625>.
- EVS (2015): *European Values Study Longitudinal Data File 1981-2008 (EVS 1981-2008)*. Data file. URL: <http://dx.doi.org/10.4232/1.12253>.
- Fabri, Antoine (2019): *cutr:R Package*. URL: <https://github.com/moodymudskipper/cutr>.
- Feenstra, Robert C, Robert Inklaar and Marcel P Timmer (2015): “The next generation of the Penn World Table”. *American economic review* 105(10), pp. 3150–82.
- Flavin, Patrick (2012): “Income inequality and policy representation in the American states”. *American Politics Research* 40(1), pp. 29–59.
- Flavin, Patrick (2015): “Campaign finance laws, policy outcomes, and political equality in the American states”. *Political Research Quarterly* 68(1), pp. 77–88.
- Franko, William W, Nathan J Kelly and Christopher Witko (2016): “Class bias in voter turnout, representation, and income inequality”. *Perspectives on Politics* 14(2), pp. 351–368.
- Gilens, Martin (2012): *Affluence and influence: Economic inequality and political power in America*. Princeton University Press.
- Gilens, Martin and Benjamin I Page (2014): “Testing theories of American politics: Elites, interest groups, and average citizens”. *Perspectives on politics* 12(3), pp. 564–581.

- Gingrich, Jane and Ben Ansell (2012): “Preferences in context: Micro preferences, macro contexts, and the demand for social policy”. *Comparative Political Studies* 45(12), pp. 1624–1654.
- Griffin, John D and Brian Newman (2005): “Are voters better represented?”: *The Journal of Politics* 67(4), pp. 1206–1227.
- Grofman, Bernard (1985): “The neglected role of the status quo in models of issue voting”. *The Journal of Politics* 47(1), pp. 230–237.
- Hayes, Thomas J (2013): “Responsiveness in an era of inequality: The case of the US Senate”. *Political Research Quarterly* 66(3), pp. 585–599.
- Hill, Seth J and Gregory A Huber (2019): “On the Meaning of Survey Reports of Roll-Call “Votes””. *American Journal of Political Science* 63(3), pp. 611–625.
- Inglehart, Robert, C Haerpfer, A Moreno, C Welzel, K Kizilova, J Diez-Medrano, M Lagos, P Norris, E Ponarin, B Puranen, et al. (2018): *World Values Survey: All Rounds-Country-Pooled Datafile Version 1981-2016*. URL: <http://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp>.
- ISSP (1986): *International Social Survey Programme: Role of Government I - ISSP 1985*. Data file. URL: <http://dx.doi.org/10.4232/1.1490>.
- ISSP (1989): *International Social Survey Programme: Social Inequality I - ISSP 1987*. Data file. URL: <http://dx.doi.org/10.4232/1.1680>.
- ISSP (1992): *International Social Survey Programme: Role of Government II - ISSP 1990*. Data file. URL: <http://dx.doi.org/10.4232/1.1950>.
- ISSP (1994): *International Social Survey Programme: Social Inequality II - ISSP 1992*. Data file. URL: <http://dx.doi.org/10.4232/1.2310>.
- ISSP (1999): *International Social Survey Programme: Role of Government III - ISSP 1996*. Data file. URL: <http://dx.doi.org/10.4232/1.2900>.
- ISSP (2002): *International Social Survey Programme: Social Inequality III - ISSP 1999*. Data file. URL: <http://dx.doi.org/10.4232/1.3430>.
- ISSP (2008): *International Social Survey Programme: Role of Government IV - ISSP 2006*. Data file. URL: <http://dx.doi.org/10.4232/1.4700>.
- ISSP (2017): *International Social Survey Programme: Social Inequality IV - ISSP 2009*. Data file. URL: <http://dx.doi.org/10.4232/1.12777>.
- ISSP (2018): *International Social Survey Programme: Role of Government V - ISSP 2016*. Data file. URL: <http://dx.doi.org/10.4232/1.13052>.

- Iversen, Torben and David Soskice (2001): “An Asset Theory of Social Policy Preferences”. *American Political Science Review*. December.
- Iversen, Torben and David Soskice (2006): “Electoral institutions and the politics of coalitions: Why some democracies redistribute more than others”. *American Political Science Review* 100(2), pp. 165–181.
- Kaiser, Henry F (1960): “The application of electronic computers to factor analysis”. *Educational and psychological measurement* 20(1), pp. 141–151.
- Kelly, Nathan J (2005): “Political choice, public policy, and distributional outcomes”. *American Journal of Political Science* 49(4), pp. 865–880.
- Kelly, Nathan J and Peter Enns (2010): “Inequality and the dynamics of public opinion: The self-reinforcing link between economic inequality and mass preferences”. *American Journal of Political Science* 54(4), pp. 855–870.
- LAPOP, Latin American Public Opinion Project (2008): *Americas Barometer 2008*. Data File. URL: www.LapopSurveys.org.
- LAPOP, Latin American Public Opinion Project (2010): *Americas Barometer 2010*. Data File. URL: www.LapopSurveys.org.
- LAPOP, Latin American Public Opinion Project (2012): *Americas Barometer 2012*. Data File. URL: www.LapopSurveys.org.
- Laswell, Harold D. (1936): *Politics: Who Gets What, When and How*. New York: Whittlesey House.
- Lax, Jeffrey R, Justin Phillips and Adam Zelizer (2017): *The Party or the Purse? Unequal Representation in the US Senate*.
- Lax, Jeffrey R and Justin H Phillips (2012): “The democratic deficit in the states”. *American Journal of Political Science* 56(1), pp. 148–166.
- Leighley, Jan E and Jennifer Oser (2018): “Representation in an era of political and economic inequality: How and when citizen engagement matters”. *Perspectives on Politics* 16(2), pp. 328–344.
- Lloren, Anouk and Reto Wüest (2016): “Are opinion leaders better represented?": *West European Politics* 39(4), pp. 800–834.
- Lupia, Arthur (2016): *Uninformed: Why people know so little about politics and what we can do about it*. Oxford University Press.
- Lupu, Noam and Jonas Pontusson (2011): “The structure of inequality and the politics of redistribution”. *American Political Science Review* 105(2), pp. 316–336.

- Matsusaka, John G (2010): “Popular control of public policy: A quantitative approach”. *Quarterly Journal of Political Science* 5(2), pp. 133–167.
- Mbaye, Samba, Marialuz Moreno Badia, Kyungla Chae, et al. (2018): *Global Debt Database: Methodology and Sources*. Tech. rep. International Monetary Fund.
- McGann, Anthony J (2014): “Estimating the political center from aggregate data: an item response theory alternative to the Stimson dyad ratios algorithm”. *Political Analysis* 22(1), pp. 115–129.
- Meltzer, Allan H and Scott F Richard (1981): “A rational theory of the size of government”. *Journal of political Economy* 89(5), pp. 914–927.
- Milanovic, Branko (2000): “The median-voter hypothesis, income inequality, and income redistribution: an empirical test with the required data”. *European Journal of Political Economy* 16(3), pp. 367–410.
- Millo, Giovanni (2017): “Robust Standard Error Estimators for Panel Models: A Unifying Approach”. *Journal of Statistical Software* 82(3), pp. 1–27.
- Mislevy, Robert J (1983): “Item response models for grouped data”. *Journal of Educational Statistics* 8(4), pp. 271–288.
- Moene, Karle Ove and Michael Wallerstein (2001): “Inequality, social insurance, and redistribution”. *American Political Science Review* 95(4), pp. 859–874.
- OECD (2019): *OECD Social Expenditure Database (SOCX) - Aggregated Data*. Version January 2019. URL: <http://www.oecd.org/social/expenditure.htm>.
- OECD (2020): *OECD Income Distribution Database (IDD)*. Version February 2020. URL: <http://www.oecd.org/social/income-distribution-database.htm>.
- O’Grady, Tom and Tarik Abou-Chadi (2019): “Not so responsive after all: European parties do not respond to public opinion shifts across multiple issue dimensions”. *Research & Politics* 6(4), p. 2053168019891380.
- Pérez, Efrén O and Margit Tavits (2019): “Language Influences Public Attitudes Toward Gender Equality”. *The Journal of Politics* 81(1), pp. 81–93.
- Persson, Mikael and Mikael Gilljam (2018): “Who Got What They Wanted? The Opinion-Policy Link in Sweden 2010-14”. *Unpublished manuscript - University of Gothenburg*.
- Peters, Yvette and Sander J. Ensink (2015): “Differential Responsiveness in Europe: The Effects of Preference Difference and Electoral Participation”. *West European Politics* 38(3), pp. 577–600.

- Piburn, Jesse (2018): *wbstats: Programmatic Access to the World Bank API*. Oak Ridge National Laboratory. Oak Ridge, Tennessee. URL: <https://www.ornl.gov/division/csed/gist>.
- Pontusson, Jonas and David Weisstanner (2018): “Macroeconomic conditions, inequality shocks and the politics of redistribution, 1990–2013”. *Journal of European Public Policy* 25(1), pp. 31–58.
- Rehm, Philipp, Jacob S Hacker and Mark Schlesinger (2012): “Insecure alliances: Risk, inequality, and support for the welfare state”. *American Political Science Review* 106(2), pp. 386–406.
- Rigby, Elizabeth and Gerald C. Wright (2013): “Political Parties and Representation of the Poor in the American States”. *American Journal of Political Science* 57(3), pp. 552–565.
- Rotman, David et al. (2004): *Consolidation of Democracy in Central and Eastern Europe 1990-2001: Cumulation PCP I und II*. Data file. URL: <http://dx.doi.org/10.4232/1.4054>.
- Schakel, Wouter (Apr. 2019): “Unequal policy responsiveness in the Netherlands”. *Socio-Economic Review*. mwz018.
- Schakel, Wouter, Brian Burgoon and Armen Hakhverdian (2020): “Real but unequal representation in welfare state reform”. *Politics & Society* 48(1), pp. 131–163.
- Scruggs, Lyle (2014): “Social welfare generosity scores in CWED 2: A methodological genealogy”. *CWED (Comparative Welfare Entitlements Dataset) working paper series* 1.
- Scruggs, Lyle, Detlef Jahn and Kati Kuitto (2017): *Comparative Welfare Entitlements Dataset 2. Version 2017-09*. Data File. URL: <http://cwed2.org/>.
- Shor, Boris, Christopher Berry and Nolan McCarty (2010): “A Bridge to Somewhere: Mapping State and Congressional Ideology on a Cross-Institutional Common Space”. *Legislative Studies Quarterly* 35(3), pp. 417–448.
- Simon, Herbert A (1955): “A behavioral model of rational choice”. *The quarterly journal of economics* 69(1), pp. 99–118.
- Simon, Herbert A (1956): “Rational choice and the structure of the environment.” *Psychological review* 63(2), p. 129.
- Simonovits, Gabor, Andrew M Guess and Jonathan Nagler (2019): “Responsiveness without Representation: Evidence from Minimum Wage Laws in US States”. *American Journal of Political Science* 63(2), pp. 401–410.

- Solt, Frederick (2020): *Modeling Dynamic Comparative Public Opinion*. URL: osf.io/preprints/socarxiv/d5n9p.
- Soroka, Stuart N. and Christopher Wlezien (2005): “Opinion-Policy Dynamics: Public Preferences and Public Expenditure in the United Kingdom”. *British Journal of Political Science* 35(4), pp. 665–689.
- Soroka, Stuart N. and Christopher Wlezien (2008): “On the Limits to Inequality in Representation”. *PS: Political Science and Politics* 41(2), pp. 319–327.
- Stadelmann, David, Marco Portmann and Reiner Eichenberger (2015): “Income and policy choices: Evidence from parliamentary decisions and referenda”. *Economics Letters* 135, pp. 117–120.
- Stegmueller, Daniel (2011): “Apples and Oranges? The Problem of Equivalence in Comparative Research”. *Political Analysis* 19(4), pp. 471–487.
- Stimson, James A., Michael B. Mackuen and Robert S. Erikson (1995): “Dynamic Representation”. *The American Political Science Review* 89(3), pp. 543–565.
- Tausanovitch, Chris (2016): “Income, Ideology, and Representation”. *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(7), pp. 33–50.
- Tausanovitch, Chris and Christopher Warshaw (2013): “Measuring constituent policy preferences in congress, state legislatures, and cities”. *The Journal of Politics* 75(2), pp. 330–342.
- The Comparative Study of Electoral Systems (2018): *CSES module 4 full release [dataset and documentation]*. Data file. URL: [doi:10.7804/cses.module4.2018-05-29](https://doi.org/10.7804/cses.module4.2018-05-29).
- Tober, Tobias and Marius Busemeyer (2019): “Breaking the Link? How European Integration Shapes Social Policy Demand and Supply”. *University of Geneva, UNEQUAL DEMOCRACIES Working paper n°4*.
- Ura, Joseph Daniel and Christopher R Ellis (2008): “Income, preferences, and the dynamics of policy responsiveness”. *PS: Political Science & Politics* 41(4), pp. 785–794.
- Van Heuvelen, Tom (2017): “Unequal views of inequality: Cross-national support for redistribution 1985–2011”. *Social science research* 64, pp. 43–66.
- Voeten, Erik and Paul R Brewer (2006): “Public opinion, the war in Iraq, and presidential accountability”. *Journal of Conflict Resolution* 50(6), pp. 809–830.
- Wegener Bernd; Mason, David S.; International Social Justice Project (ISJP) (2002): *International Social Justice Project 1991 und 1996 (ISJP 1991 und 1996)*. Datenfile. URL: <http://dx.doi.org/10.4232/1.3522>.

-
- Wlezien, Christopher (1995): “The Public as Thermostat: Dynamics of Preferences for Spending”. *American Journal of Political Science* 39(4), pp. 981–1000.
- Zhou, Xiang (2019): “Hierarchical Item Response Models for Analyzing Public Opinion”. *Political Analysis*, pp. 1–22.