

# **“Don’t play if you can’t win”—Does economic inequality undermine political equality?**

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## **Abstract**

In this paper, we investigate whether income inequality negatively affects voter turnout. Despite some progress, the answer to this question is still debated due to methodological disagreements and differences in the selection of countries and time periods. We contribute to this debate by triangulating data and methods. More specifically, we use three kinds of data to resolve the question: First, we use cross-sectional aggregate data of 21 OECD countries in the time period from 1980 to 2014 to study the relationship between inequality and electoral participation. Second, we zoom in on the German case and examine local data from 402 administrative districts between 1998 and 2017. Focusing on within-country variation eliminates differences that are linked to features of the political system. Finally, we combine survey data with macro data to investigate the impact of inequality on individual voting. This final step also allows us to test whether the effect of income inequality on voter turnout differs across income groups. Taken together, we offer the most comprehensive analysis of the impact of social inequality on political inequality to date. We corroborate accounts that argue that economic inequality exacerbates participatory inequality.

Keywords: Economic inequality, electoral turnout, democracy, methods triangulation, developed countries

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## 1. Introduction

The promise of democracy rests on the premise that citizens participate in the democratic process and that they participate equally. However, in many countries, increasingly fewer citizens are making use of their democratic right to elect their representatives and governments. Declining turnout rates and a growing “participation gap” (Dalton, 2017) between the rich and the poor are causing concern about a broken promise of democracy (Schlozman et al., 2012). Declining participation at first seems puzzling as studies taking a traditional socio-economic resource approach on democratic participation unanimously show that individuals with more resources are more likely to vote (Verba, 1996; Brady et al., 1995; Gallego, 2015). Considering the increasing resources at the disposal of citizens across the world, one would therefore expect more rather than less participation in politics.

Existing studies in comparative political economy, however, suggest that it is not primarily individual resources that determine voter turnout but their *distribution*. In most rich democracies, this distribution has grown more unequal (Alderson and Nielsen, 2002; Alvaredo et al., 2017; Piketty, 2014). Regarding the implication of this rising inequality on electoral participation, the literature has advanced arguments for both a negative as well as a positive relationship between economic inequality and political participation. The proponents of the *conflict perspective* argue that a widening income gap between the rich and the poor should incentivize the poor even more to use their voting power to “soak the rich” (Shapiro, 2002) while the rich should be drawn to the polls to prevent this from happening. Implicitly or explicitly, the theoretical workhorse of these studies is the Meltzer–Richard model (1981) that leads us to assume that it is rational to participate if the stakes are high—and they are particularly high in unequal countries (Brady, 2004). Advocates of the *relative power approach* or the *rational abstention approach*, by contrast, maintain that in the context of high inequality the rich do not need to resort to voting to influence political outcomes as they

have other means to influence politics. As the poor learn from experience that the system is biased against them, they give up on participating.

Although both theoretical arguments seem plausible, the empirical evidence is tilted towards a depressing effect of inequality on political engagement with a substantial number of Null findings. What makes their empirical assessment difficult, is the fact that these studies not only use an array of different methods but also cover different time periods and countries (Cancela and Geys, 2016: 267). We build on these arguments and attempt to clarify the relationship between economic inequality and political participation from a multi-empirical perspective in the rich democracies of the “global north.” Hence, the main purpose of this article is to resolve this question by triangulating data and methods. More specifically, we use three kinds of data to resolve the question. First, we use cross-sectional aggregate data from 21 OECD countries for the period 1980–2014 to study the relationship between inequality and voter turnout. Second, we zoom in on the German case and examine local data from 402 communities from 1998–2017. By focusing on within-country variation eliminates differences linked to features of a country’s political system, political culture or other idiosyncratic features. Third, we combine survey data with macro-data to investigate the impact of inequality on individual voting behavior. This final step allows us to test whether the effect of income inequality on political participation varies across different income groups.

We focus on rich democracies and the period since 1980. Studies of the global distribution of income and wealth have suggested a “new geography of inequality,” in which differences between countries decrease while within-country inequality increases (Firebaugh, 2009). Lakner and Milanovic (2016) as well as Alvaredo et al. (2017) suggest an “elephant curve” of inequality with two sets of winners. In relatively poor countries, the middle-class has benefitted from high growth rates whereas in rich countries, the poor and middle classes have experienced stagnating incomes with the rich receiving a disproportionate share in income

growth. Given these patterns, we would not expect to find relationships between inequality and turnout to be the same across regions with different growth and inequality trajectories. Hence, we focus on a relatively homogeneous set of rich democracies during a period with rising income inequality to assess the relationship between inequality and turnout.

For this group of countries, we find strong and consistent evidence that voter turnout is lower in more unequal societies. Moving from the most egalitarian to the most unequal countries sees a depression of turnout—all else being equal—by 7 to 15 percentage points (depending on the exact model), which is comparable in magnitude to the effect of compulsory voting. Within Germany, where institutional variables do not differ, relatively deprived regions have significantly lower levels of turnout. Finally, we find that turnout declines for all income groups in unequal countries but is particularly strong for low-income groups. Our results are therefore in line with the rational abstention-perspective, which argues that inequality reduces electoral participation, particularly among the poor.

This article is structured as follows. The next section discusses the two main theoretical approaches on the possible impact of income inequality on voter turnout and the concomitant contradictory findings that existing studies produce. Section 3 introduces the three datasets, the methodologies employed in this study, and the three steps of our analysis. The final part of the article discusses the results and addresses unresolved questions and outlines venues for further research.

## **2. Literature review on the inequality–participation nexus**

Our argument builds on recent studies suggesting that it is not only resources that determine voter turnout but also their distribution. There is general agreement that the gap between rich and poor has been widening in most democratic countries (Alderson and Nielsen, 2002;

Alvaredo et al., 2017; Piketty, 2014) but studies on the relationship between economic inequality and voter turnout are still rare. Theoretically, it is not evident why higher inequality should depress turnout. From a *conflict perspective*, a widening income gap between the rich and the poor might incentivize the poor even more to use their voting power to “soak the rich” (Shapiro, 2002). Yet, increasing evidence based on a variety of studies on the country-, regional- or individual level of analysis accumulates for the alternative view that politics experience teaches the poor that politics is systematically biased against them. “Don’t play if you can’t win” is the phrase Goodin and Dryzek (1980: 292) coined for rational nonparticipation by the least well-off (see also Pateman, 1971; Offe, 2013). Accordingly, the argument has been called the *relative power approach* or *rational abstention approach*. High levels of income inequality signal to poorer citizens that their concerns are likely to be neglected, whereas the better-off learn that they get what they want and have other, possibly more effective, means—lobbying, donations, direct contact to decisions-makers—to get their voices heard. Under these circumstances, both groups are less likely to participate because the poor have given up, while for the rich voting is just one way among many to influence political decisions. In egalitarian countries, in contrast, the odds of having an impact are more equally distributed and thus more citizens will participate. The rational abstention approach therefore predicts *lower turnout rates in more unequal countries*. Further evidence for the mechanisms that the rational abstention proclaims is provided by the responsiveness literature that finds that political decision-makers are much more responsive towards the rich—and the poor get what they want only if their interests are aligned with those of higher income groups (Gilens, 2005; Rosset et al., 2013; Bartels, 2008: chapter 8). The poor also possess relatively fewer resources to invest in politics, while the rich find it easier to dominate the political agenda (Schattschneider, 1960; Gilens, 2005). Therefore, when income and wealth are unequally distributed, the less affluent are likely to find that the issues being debated are not those that interest them and so give up discussing politics (Solt, 2008: 58). Given this pattern,

abstention seems to be a rational choice for the less well-off, although one that might exacerbate existing biases.

In a seminal early study on the question and based on country aggregated data, Goodin and Dryzek (1980: 283) regress GDP per capita as an indicator of absolute levels of resources, and the Gini index as an indicator of the distribution of resources on voter turnout for 38 countries using data from the 1950s to the 1970s. They find a significant negative effect of inequality on turnout. However, they do not include any institutional variables that might account for different turnout rates across countries. In a more encompassing cross-national study, Fumagalli and Narciso (2012) analyze 85 countries for the 1990s with institutional, regional, and economic control variables

Other studies that examine the relationship between inequality and turnout on the macro level, however, do not find a significant impact of income inequality on turnout. Lister (2007) studies turnout in 15 rich democracies for 1963–1993, with regression models including both institutional and economic variables. Although Lister finds a negative impact of income inequality on turnout, Arzheimer (2008) criticizes the statistical model and is unable to confirm the findings using the same data set. Finally, Stockemer and Scruggs (2012) analyze 550 democratic elections in Western and non-Western countries. They ascertain that the Gini index has no significant impact on voter turnout, neither as a whole nor for each separate group.<sup>i</sup>

Mixed evidence for the relative abstention approach is also provided on the subnational level. Mahler (2002) analyzes 184 regions in 11 countries for the late 1980s and early 1990s. Although inequality has a negative impact on turnout, it fails to reach statistical significance. Focusing on the US, a couple of studies investigate turnout variations across states. Boix (2003: 127-128) looks at turnout rates in the US states for the 1920 presidential election and interacts the percentage of farming population with a measure of wage inequality. Jointly,

these two variables have a significant negative impact on voter participation. In unequal rural states, fewer citizens vote. Looking at more recent elections, Galbraith and Hale (2008) find in cross-sectional analyses a negative but not always significant effect of inequality on turnout in US states. Their supplementary analyses of changes taking place between 1980 and 2004 show a significant negative effect of inequality on turnout. Rising income disparities, they conclude, depress turnout. Their results are confirmed by studies of Italian (Scervini and Segatti, 2012; Solt, 2004) and European regions (Mahler, 2002).

A third empirical approach takes a multilevel perspective and examines the interaction between micro-and macro-level factors that shape relationships between income inequality and political participation but again fails to provide definite findings. Solt (2010); (2008) runs a series of multilevel models for a set of 23 countries and the US states and finds that higher levels of income inequality lead to lower and more unequal turnout. Anderson and Beramendi (2008) employ an instrumental–variable approach and, based on a sample of 18 OECD countries, conclude:

“As inequality goes up, so do the odds of abstention from electoral participation. These effects are unambiguous, and the inference does not depend on what kind of inequality we consider.” (Beramendi and Anderson, 2008: 295).

However, using survey data from US states for 1980–2004, Wichowsky (2012) finds no relationship between turnout differences and the level of income inequality. Similarly, Gallego (2015: chapter 6) analyzes 85 elections in 36 democracies from roughly the late 1990s through to 2007. She finds a negative effect of gross and net income inequality on voter turnout (though not always significant) but no evidence that higher net inequality leads to more unequal turnout. Based on a mediation analysis, Gallego suggests political attitudes are the mechanisms linking economic and electoral inequality.<sup>ii</sup> For Europe, findings are equally inconclusive. Using cross-sectional data from the European Election Study 2009, Horn (2011)

applies various measures of income inequality to assess an individual's propensity to vote.

While the coefficients are mostly negatively signed, several reach significance and substantial effects seem limited. In a cross-sectional multilevel analysis of 23 OECD countries, Jaime-Castillo (2009) finds that inequality generally suppresses turnout, but inequalities in the upper half of the income distribution are more relevant to turnout than inequalities in the middle and lower classes (see also Horn 2011). Finally, Jensen and Jespersen (2017) find a negative effect of being poor on electoral participation with the relationship being conditioned by inequality and national wealth.

In conclusion, the relationship between economic and participatory inequality is tested by very different empirical set-ups, which produce inconclusive findings. As our review of existing studies on the subject reveals, summarizing the findings into a coherent model is further aggravated by the vast variance in the geographical and temporal scope of the studies and a variety of explanatory variables. We conclude that studies linking income inequality and voter turnout have so far failed to produce consistent results. One key reason is possibly the broad range of empirical strategies with authors not only analyzing different countries and different periods but also using different types of data, different methods, and different explanatory variables. In this article, we make a systematic effort to resolve the question of how political and economic inequality are related in rich democracies.

### **3. Analyses**

To shed light on the effect of inequality on turnout, we use three datasets, each analyzing the nature of the relationship between economic and electoral inequality from a different perspective. The study starts with a time-series-cross-sectional analysis—the most common approach—complementing it in a second part with an in-depth analysis of subnational data in

a single country and, in a third part, studying individual participation decisions in a cross-national setting.

First, we examine 21 OECD countries from 1980–2014. The countries differ widely in their electoral institutions and socio-economic profiles but are among the most prosperous democracies in the world but differ considerably in the degree of income inequality.<sup>iii</sup> Rather than unsystematically selecting explanatory variables, the dataset allows to control for the set of institutional, electoral, and economic variables that have frequently been found to influence voter turnout (Blais, 2006; Cancela and Geys, 2016; Geys, 2006). Among the *institutional variables*, compulsory voting increases turnout, while majoritarian electoral systems exhibit lower turnout rates (Jackman and Miller, 1995; Jackman, 1987; Bowler et al., 2001). Majoritarian electoral systems tend to produce safe seats with limited competitiveness for local electorate races, giving voters little incentive to turn out (Selb, 2009). In contrast, proportional representation systems are designed to ensure every vote counts, making local races always competitive (Blais and Carty, 1990; Selb, 2009; Powell, 1980). In majoritarian systems, parties also tend to converge towards the median with such ideological indistinctiveness reducing voter motivation to turn out (Cox, 1999; but see Heath, 2016: who finds ideological distinctiveness of parties to be less important for turnout than descriptive representation). Other important institutional variables include the political system structure (presidentialism *versus* parliamentarianism, or the degree of bicameralism). These ‘rules of the political game’ determine the importance of each election and matter for voter turnout (Stockemer and Calca, 2014; Tavits, 2009). For *specific elections*, we take into account the closeness of the electoral race and the effective number of parties (Blais and Dobrzynska, 1998; Jackman and Miller, 1995). Finally, population size and GDP per capita are *socioeconomic variables* that require controlling.

Second, we study the relationship between inequality and turnout in a longitudinal single-country perspective. Examining the link between economic inequality and participation in electoral politics in a single polity eliminates variations in institutional and political factors that might influence voter turnout in addition to the factors we are able to control for. Germany demands closer examination as it exhibited both an equalitarian income structure and exceptionally high levels of political participation for most of the post-war period, with both inequality and participation having converged to average European levels since (Schäfer, 2015). Furthermore, relying on an original dataset that combines information on the socio-economic situations and the electoral outcome of subnational units (the level of administrative districts) avoids the problems of individual level data (over-reporting of participation combined with under-representation of disadvantaged segments of the population, see Selb and Munzert, 2013; Tourangeau et al., 2010; Schäfer et al., 2016) but contains a sufficient number of observations to draw inferences from the analysis about the relationship between economic and political inequality. As there are no significant institutional differences within Germany, we focus on election-specific and socio-economic control variables such as population size, average income at district level, and the closeness of the electoral race. We also control for difference in political socialization and political culture in the former GDR and FRG with an East–West Dummy.

Third, we combine election surveys from the same 21 OECD countries used in the first step with macro-data to examine the impact of income inequality on individual choices to vote or abstain, again controlling for institutional differences between countries. This final step allows us to assess whether inequality affects electoral participation of different income groups equally. In all analyses, we employ a range of statistical approaches to test the empirical robustness of our findings as rigidly as possible.

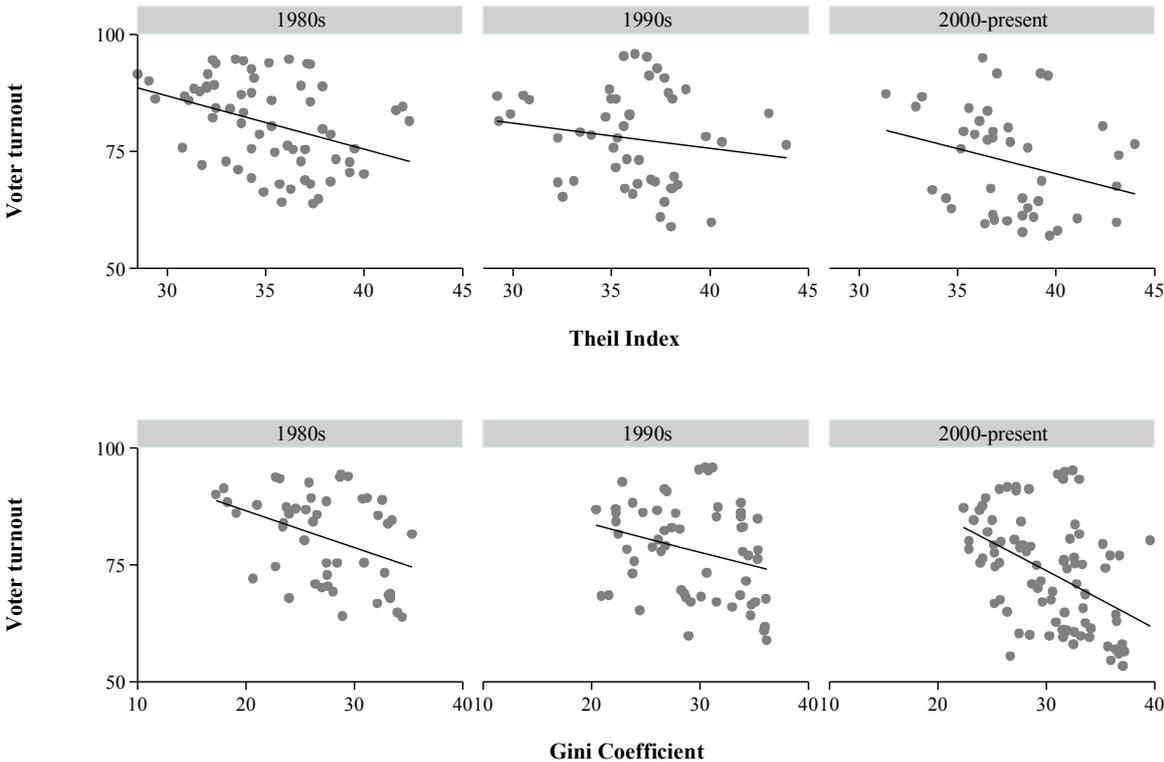
### 3.1 Time-series cross-sectional analyses of 21 countries from 1980–2014

This section analyzes voter turnout in 21 countries over roughly three decades. Voter turnout is measured as the share of actual voters to all registered voters in parliamentary elections. We perform the analyses using two different measures of income inequality: the Gini coefficient and the Theil index. The Gini coefficient is calculated from the dispersion of individual (or household) incomes, while the Theil index uses the income share of geographical units to calculate income inequality.<sup>iv</sup> Descriptive statistics and the data sources can be found in Appendix 1.1.

Figure 1 shows the correlation between the two measures of income inequality and voter turnout over time. Despite considerable country variation, visual examination suggests a negative relationship. In fact, most correlations are statistically significant but only moderately strong. For a more reliable picture, multivariate analyses are used to control for institutional and political factors that have been shown to be relevant for aggregated turnout. In the methods literature, there is an ongoing discussion about the best way to analyze time-series cross-sectional data. It is especially disputed whether or not to include a lagged dependent variable (LDV) to de-trend the data. Beck and Katz (1995) recommend using panel-corrected standard errors and to also include a LDV. Others, however, point out that a LDV may “falsely dominate” a regression (Achen, 2001). This is particularly the case with the kind of data we use. Both the dependent variable and the main independent variable of interest change slowly over time.<sup>v</sup> Usually, turnout of election  $t_1$  is similar to that in election  $t_0$ , and inequality in one year will very much resemble that of the previous year. Also, differences between units (countries or regions) are likely to have an impact on both the level and the rate of change of our dependent variable.<sup>vi</sup> This article does not enter the debate about the most feasible approach in any detail but performs different specifications to check the robustness of the results. We use several models that have been used the most in previous

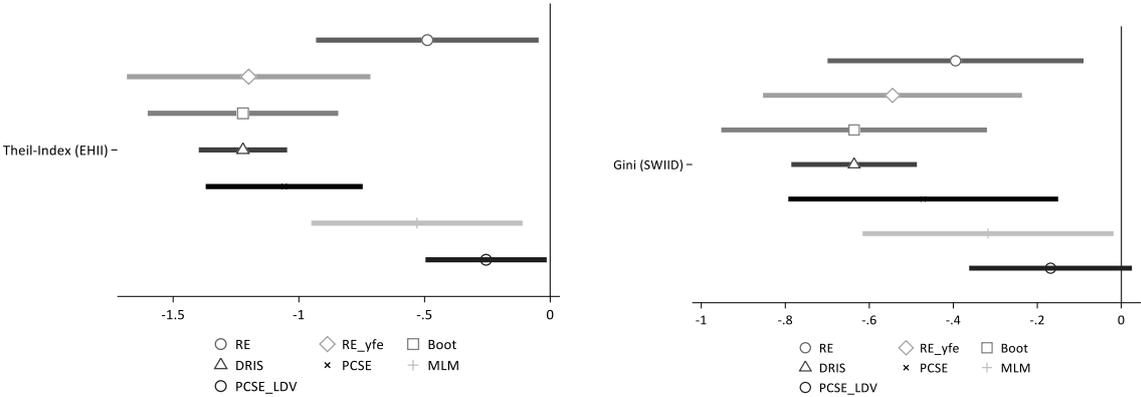
analyses. However, a number of tests indicate that a random effects model best suits the structure of our data because it allows including variables that are time-invariant as well as time-variant.<sup>vii</sup>

Figure 1: Income inequality and voter turnout



Note: See Appendix 1.1 for data sources.

Figure 2: Regression coefficients of income inequality on voter turnout based on the models in Appendix 1.2 & 1.3



Note: This figure shows the regression coefficients for our two measures of income inequality and six regression models with 95% confidence intervals. For more details, see Appendix 1.2 and 1.3.

As Figure 2 visualizes, all our models confirm that income inequality negatively affects voter turnout at the macro-level.<sup>viii</sup> In all models, the effect is significant at the 90 percent level and, in all but one model, the effect reaches the more conventional level of 95 percent. The exception is a model with panel-corrected standard errors, which also included a lagged dependent variable.

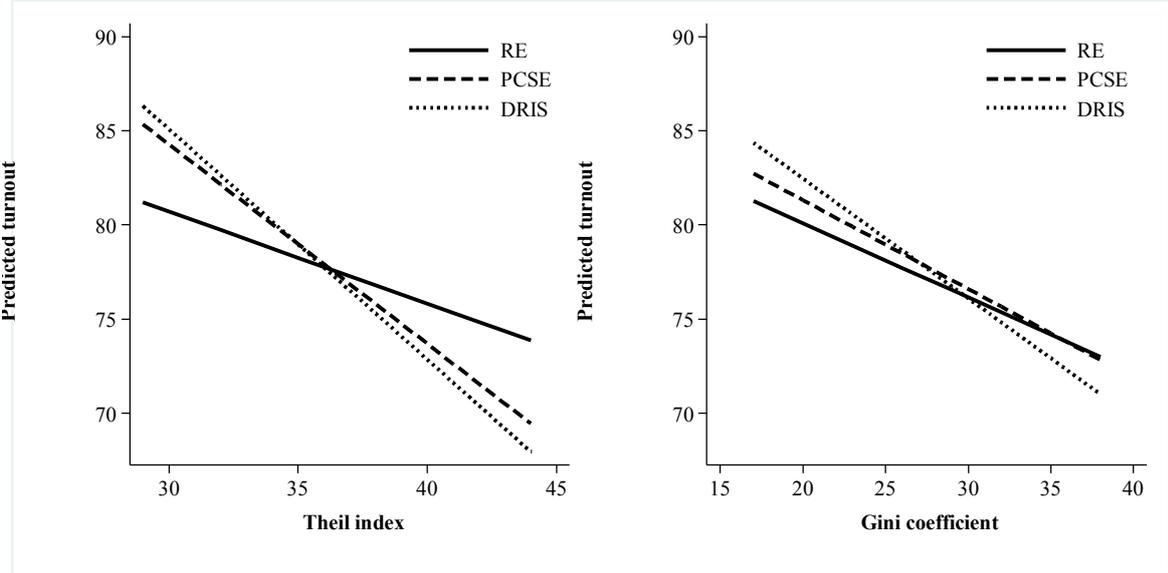
Regarding the control variables, the empirical results are generally in line with expectations from the literature. *Compulsory voting* strongly increases turnout rates. In countries such as Australia, Belgium, or Luxembourg, turnout usually exceeds 90 percent. In contrast, fewer citizens vote in parliamentary elections than in *presidential systems* such as in France or the United States. After controlling for other factors, turnout is higher in countries with *second chambers* such as, for example, Germany. Turning to election-specific variables, the results are less unequivocal. Higher *disproportionality* seems to diminish turnout but the coefficient is not consistently statistically significant. The evidence for the *effective number of parties* is inconclusive, whereas most models show a significant negative effect regarding the distance between the first and the second party—meaning turnout is higher in *close races*. All else being equal, more *populous* and *richer countries* seem to have lower turnout rates. Finally, the time trend confirms that average turnout rates have declined since the 1980s. In particular, turnout is significantly lower in the most recent decade than in the past.<sup>ix</sup>

To assess the robustness of our results, we performed several tests (available from the authors). First, we reran the regression analysis (using model MLM)<sup>x</sup> and excluded each country in turn. In the resulting 42 regressions, the effect of income inequality is always negative and in 37 out of 42 cases statistically significant. Second, we excluded each year in turn. Again, the coefficient is always negative and in all cases  $p$  is smaller than 0.1 and in 25 out of 34 cases smaller than 0.05. Third, we replicated our analyses taking the uncertainty of measuring inequality into account. In the *Standardized World Income Inequality Dataset*

(Solt, 2016), the Gini coefficients and their associated uncertainty are represented by 100 separate imputations. While highly correlated, the estimates slightly differ. We used these imputations to reanalyze the relationship between inequality and voter turnout. The results confirm the general pattern.

Finally, we inquire how strongly income inequality affects voter turnout. To do so, we plot the predicted level of turnout against the two measures of income inequality in Figure 3. The size of the effect of course differs according to the different models but even the most conservative estimate indicates that turnout in the most unequal country is about eight percentage points lower compared to the most egalitarian country. Some models even predict a difference of more than 20 percentage points. Even with the conservative estimates, moving from the highest level of income inequality to the lowest has a similarly substantial effect on turnout as compulsory voting does. The effect of income inequality on political participation is therefore not only significant but also substantial.

Figure 3: Substantial effects of inequality on turnout



Note: This figure shows the estimated substantial effects of income inequality on aggregate voter turnout. The estimates are based on the regression models detailed in Appendix 1.2 and 1.3.

This section looked at 21 rich democracies over a three-decade period. Even the most cautious reading of the previous analyses suggests that inequality affects voter turnout. We now turn to a single-country-study to see whether similar results at the subnational level can be found.

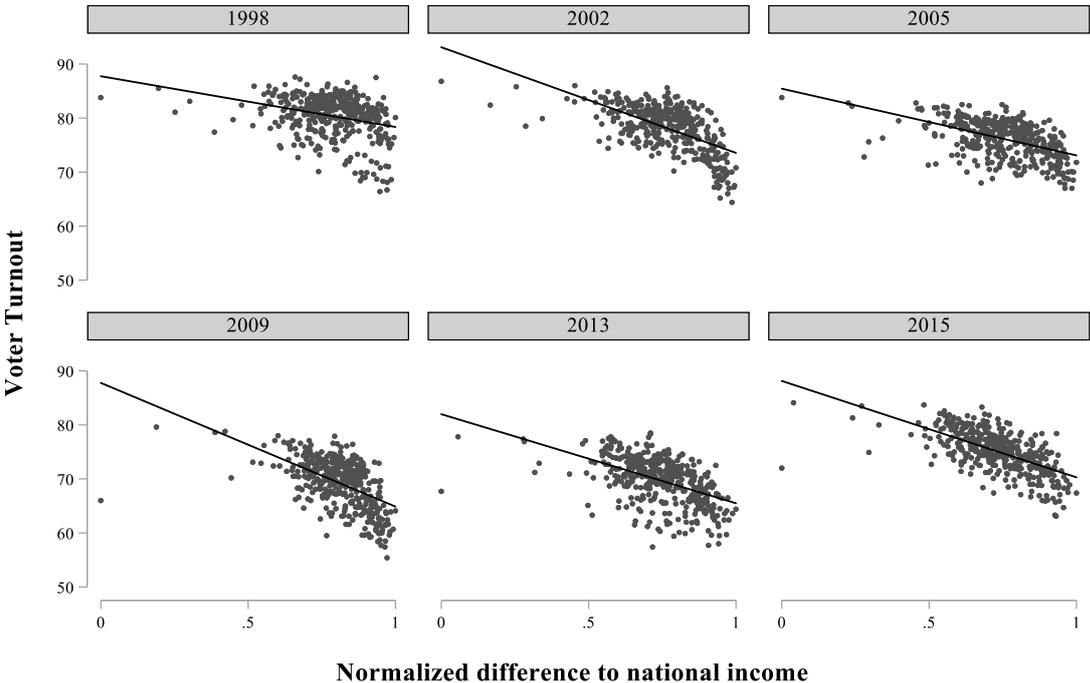
### **3.2 Regional inequality and turnout in Germany**

Our longitudinal single-country dataset includes information for 402 administrative districts at six federal elections (1998, 2002, 2005, 2009, 2013 and 2017), i.e. around 2,400 observations in total.<sup>xi</sup> Voter turnout is the share of *valid* votes of all eligible voters. Since Gini coefficients or similar measures for economic inequality are not available on the local level, we use as a measure of regional inequality the normalized difference of the average income at district level in relation to the national average in the same year.

We are aware that this measure is not strictly comparable to the ones used so far, since it captures the relative position of a district within the overall structure of the economy at a given time. The measure does not therefore register individual-level income inequality within a given district but rather regional disparities. Regional disparities in economic performance are found to be persistent and an important driver of unequal distribution of resources on the macro level (OECD, 2005; Ansell and Gingrich, 2019). Regional disparities also play a key role in the fairness of inequality debate, specifically in the debate on circumstance-based versus effect-based causes of inequalities (Checchi and Peragine, 2005; Peragine, 2004). We therefore consider it useful to analyze how disparities *between* local entities of a given polity affect turnout. One of the advantages of this measurement is that it considers the time trend in regional inequality (See Appendix 2.1 for descriptive statistics and data sources). Our findings are robust when measuring inequality as the difference to the average income within each federal state or to the average income in East or West Germany.

A first impression of the longitudinal relationship between inter-regional inequality and turnout in Germany is given in Figure 4. The figure shows turnout rates on district levels on the y-axis and inequality on the x-axis for each of the considered federal elections. Figure 4 also suggests that participatory and economic inequality—expressed as regional disparities—are clearly related in Germany.

Figure 4: Inequality and turnout in Germany from 1998 to 2017



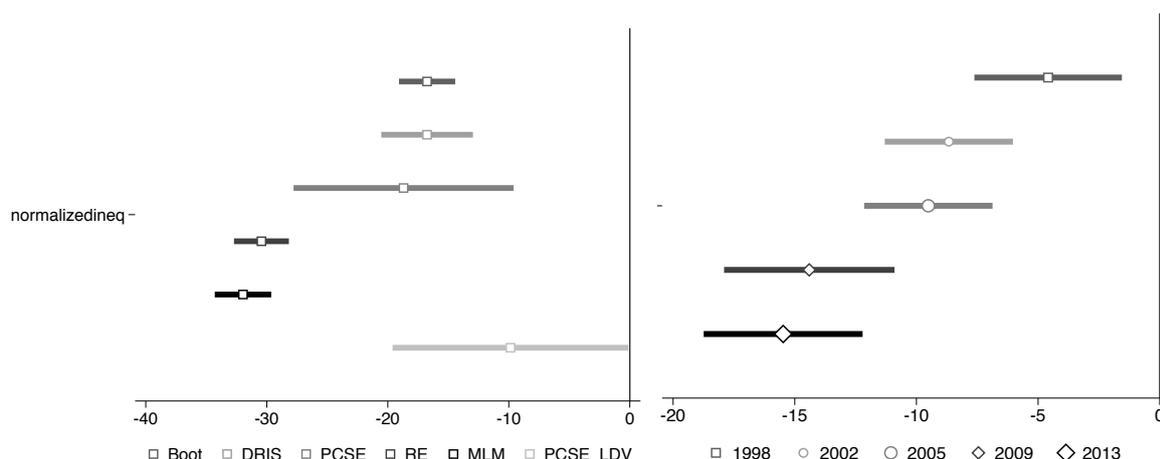
Note: The horizontal axis shows the normalized difference of the average income at district level from the national average as a measure of income inequality. Higher values stand for higher levels of inequality. See Appendix 2.1 for data sources.

The analysis below examines the relationship in a multivariate perspective. We run a number of different models that control for the following: the average income in a district, the closeness of the electoral race, the size of the district in terms of population, and a dummy variable for Eastern Germany. The analyses confirm the findings from the time-series-cross-sectional analyses: inequality exerts a consistently negative impact on voter turnout regardless of the exact model specification.<sup>xii</sup> The effect reaches significance on the conventional 95 percentage confidence level, the model that includes the lagged dependent variable being the only exception. Again, given the stickiness of the dependent variable over time, this is not

surprising. As to the control variables, they largely correspond to the theoretical expectation that turnout is higher where the electoral race is contested and takes place in more populous districts. In the case of Germany, this is because turnout tends to be higher in cities than in rural districts. As in the cross-country analysis, turnout is lower in richer entities again disconfirming the translation of the socio-economic status argument to the macro-level. Finally, the analysis confirms that turnout is also lower in the Eastern part of Germany (Schäfer et al., 2016).

We turn now to considering the longitudinal dynamics of the inequality–turnout relationship. The right of Figure 5 displays the coefficient for inequality for each election. Two points are noteworthy. First, regional disparities in economic prosperity depresses turnout consistently in all elections under consideration. Second, the effect of inter-regional inequality on turnout seems to increase over time. This is interesting in the light of party development in Germany. In the time period under investigation, Germany witnessed the emergence of two new populist parties, first in 2005 *Die.Linke* as a reaction to the encompassing labor market reforms enacted by the red–green government (Schwander and Manow, 2017b), and then in 2013 the radical-right populist Alternative for Germany (AfD) as a reaction to the euro- and refugee-crises (Franzmann, 2016; Schwander and Manow, 2017a). Despite several arguments in the literature that populist parties might increase turnout (Immerzeel and Pickup, 2015; Mudde and Rovira Kaltwasser, 2017), we cannot see any such effect here (see also Schwander et al. (2019) and Leininger and Meijers (2017) for similar findings).<sup>xiii</sup>

Figure 5: Coefficients from multivariate models on electoral turnout in Germany



Note: This left part of this figure shows the regression coefficients for six different regression models with 95% confidence intervals (see Appendix 2.2). On the right-hand side, we compare the effect of inequality on turnout over time, see Appendix 2.3 for more details.

To conclude, our within-country analyses show that economic inequality between regions translates into high levels of electoral inequality

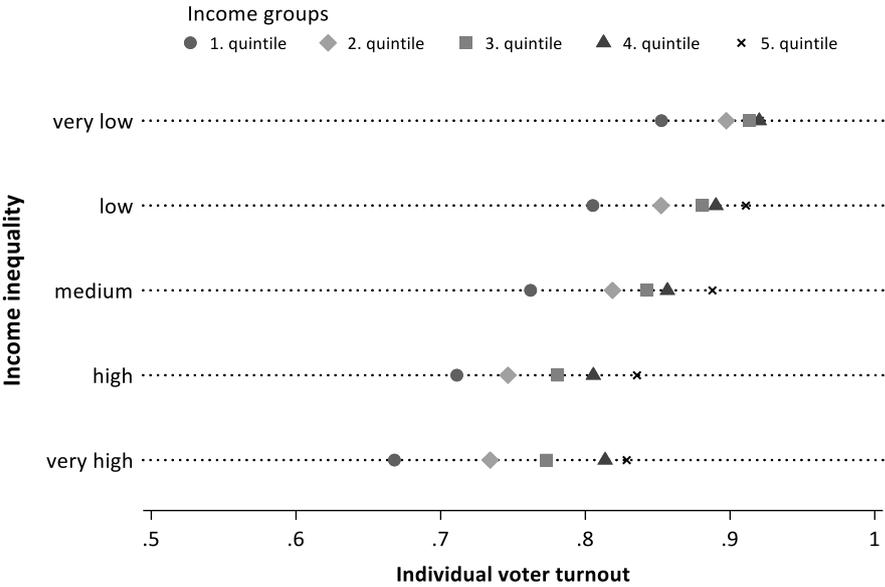
### 3.3 Who abstains? Combining surveys and macro-data

Our analyses so far do not answer the question of *who abstains* when inequality rises. The rational abstention perspective is supported when differences in turnout across income groups are higher in more unequal countries. In this section, we analyze whether higher rates of inequality affect individual decisions to participate in electoral politics and, in addition, which income groups are most strongly influenced. We therefore combine macro-level data and surveys from 21 countries over a period of almost three decades. The dependent variable is self-reported electoral participation in the last general election. We use Eurobarometer, ISSP, ESS, and CSES surveys to include the largest number of years and countries as possible (see Appendix 3.2 for more information on the employed surveys and descriptive statistics).

However, there are three limitations. First, surveys are not available for all years and some countries have participated more often than others (see Appendix 3.1). Second, combining

various surveys reduces the number of explanatory variables we can use. For example, items that measure internal and external efficacy are not available in all surveys. The following analyses therefore use gender, age, union membership, marital status, unemployment, education, and household income as explanatory variables at the micro-level. At the macro-level, we use the same set of explanatory variables that we used in Section 3.1. Third, respondents over-report their electoral participation and, as a consequence, average reported turnout is substantially higher than actual turnout (see Selb and Munzert, 2013). If this is—in part—due to an under-representation of poorer citizens in surveys, the results probably underestimate the actual turnout difference. Our analyses are therefore a conservative estimate of the relationship between inequality and voting.

Figure 6: Income inequality and voter turnout of different income groups



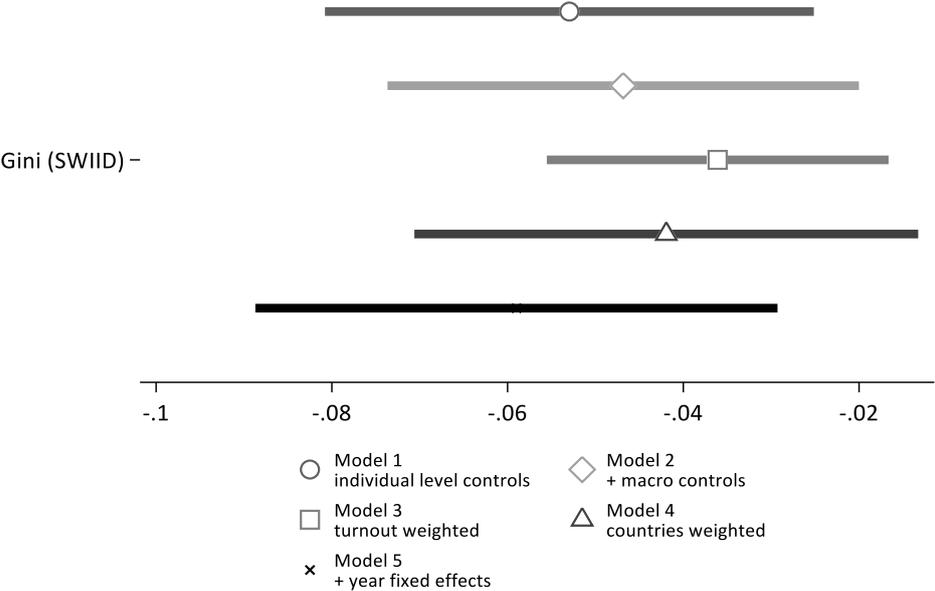
Note: This figure plots self-reported turnout of five income quintiles at different levels of income inequality based on the Gini index (Solt 2016). Countries with compulsory voting are excluded.

In the first step, we look descriptively at turnout differences of income groups (quintiles) at different levels of income inequality. For Figure 6, we subdivide the country into five groups based on the Gini index (very low = 0.2–0.23; low = 0.24–0.27; medium = 0.28–0.31; high =

0.32–0.35; very high = 0.36–0.39). For each group, we display voter turnout for five income quintiles. Figure 6 shows a clear pattern: not only are average turnout rates lower in more unequal countries but the turnout differences are also more pronounced. This is a first indication that higher economic inequality increases political inequality.

Multivariate analyses confirm this impression.<sup>xiv</sup> At the micro-level, we find a curvilinear relationship between age and voting, and a positive effect of union membership, marriage, and household income on the individual decision to vote. In contrast, unemployed respondents vote less frequently. At the macro-level, the results corroborate those of the cross-sectional analyses. In line with the relative power thesis, we find a negative impact of income inequality on individual turnout. Fewer citizens vote in more unequal countries. These results are robust for the model specification and also hold true if we weight voters and nonvoters to correct for over-reporting.<sup>xv</sup> Figure 7 shows the logit coefficient of the Gini coefficient for the first four models from table 5 of the online supplementary file. In all model specifications, there is a statistically significant negative effect of income inequality on voting.

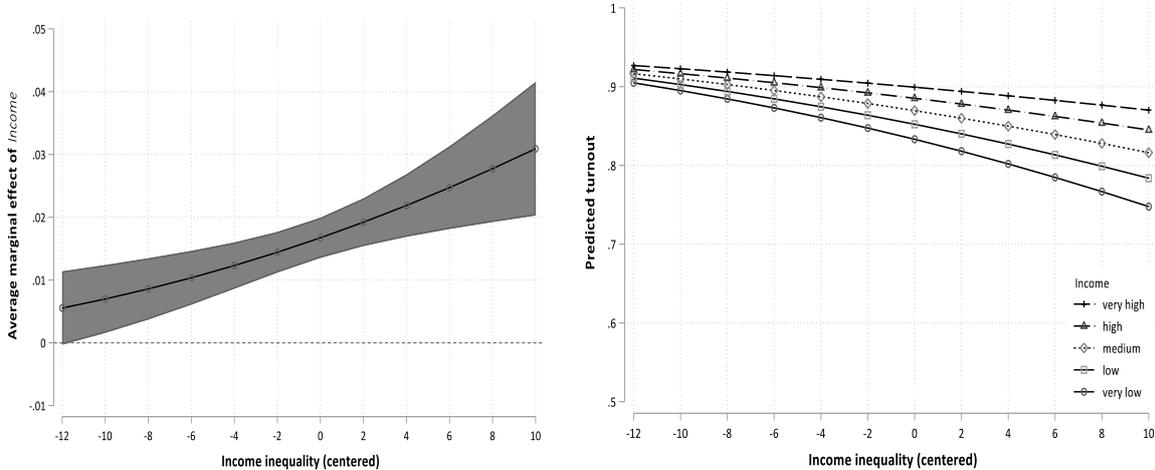
Figure 7: Coefficients from logistic regression models on individual turnout



Note: This figure shows the coefficients of five logistic regression models that explain individual voter turnout in 21 countries. See Appendix 3.3 for detailed results.

In the fifth model, we interact income with the Gini coefficient to examine whether inequality affects the political engagement of varying income groups differently. The interaction term is positive and statistically significant, which means that voting differs more strongly between income groups in more unequal countries. The left of Figure 8 displays the predicted probability to vote for income quintiles across the range of income inequality. In the most egalitarian countries—Austria, Belgium, Denmark, and Sweden—all income groups participate at equally high rates. In more unequal countries such as Portugal, the United Kingdom or the United States, turnout differences are more pronounced as the poor abstain more often. The right of Figure 8 shows the average marginal effect of individual income for different levels of inequality. The income coefficient grows larger as we move from egalitarian to unequal countries. The analysis of the survey data therefore confirms that inequality depresses turnout for all income groups—and the decrease is significantly stronger for the poorest citizens. Income inequality, we conclude, lowers overall turnout rates while rendering electoral participation more unequal.

Figure 8: The effect of income inequality on voting



Note: This figure is based on model 4 in Appendix 3.3, in which we interact respondents’ household income with income inequality at the country level. Macro-level variables are centered at their mean.

#### **4. Conclusion**

Over the past three decades, income inequality has been rising in most rich democracies. Studies have sought to disentangle the way in which higher levels of inequality affect the democratic process. Of special interest is the nature of the relationship between economic inequality and political inequality, i.e. how the unequal distribution of economic resources affects participation in the political process. However, studies devoted to this question have looked at different countries and different periods, used an array of methods, sometimes omitted crucial explanatory variables, and employed both aggregate and micro-data. Consequently, results have been inconclusive. In this article, we have made the most systematic effort yet to resolve the question of how political and economic inequality are related in rich democracies. Since the dynamics might differ between countries with different state capacities (Kasara and Suryanarayan, 2015), we limited our study to a relatively uniform set of rich democracies and focused on the decades since 1980, in which world-wide income inequality has been declining but citizens in rich democracies have become more unequal. We used three different datasets with the most recent data available and employed a variety of methodological approaches to deal with the panel structure of the data. We used aggregate-level data from 21 OECD countries for a 35-year period, local data from Germany for 1998–2017, and combined surveys from the same set of 21 countries for the mid-1980s to the mid-2010s.

Across datasets and methods, we find a consistently negative effect of income inequality with mostly statistically significant coefficients that strengthen confidence in the findings. Moving from the most egalitarian to the most unequal countries depresses turnout—all else being equal—by 7 to 15 percentage points (depending on the exact model), which is comparable in magnitude to the effect of compulsory voting. Within Germany, where institutional variables do not differ, relatively deprived regions have significantly lower levels of turnout. Finally,

we find that turnout declines for all income groups in unequal countries but particularly strongly for low-income groups. Our findings therefore unambiguously support the *relative power approach*—or rational abstention approach—that expects inequality to have a negative impact on political engagement. Our analyses show that in more unequal countries, fewer people turn out and vote. The idea that inequality mobilizes the poor to greater political activism because “more is at stake” clearly does not have any empirical grounding.

This is a worrisome finding for the fight against inequality and poverty. In a feedback cycle between citizens’ participation and parties’ responsiveness to the concerns of their constituencies, those at the bottom of society rely on state intervention to alleviate their grievance, or at least to improve the situation of their children, in the form of social insurance programs to protect them from the vagaries of markets, redistribution of income to compensate for lower income, expansion of the public sector to provide employment and high-quality social services to improve life chances of future generations (Esping-Andersen, 1990; Huber and Stephens, 2001). As part of a ‘democratic class struggle’ (Korpi, 1983) or ‘electoral socialism’ (Przeworski and Sprague, 1986), parties organize disadvantaged social strata and enact public policies which reduce inequality in both market and disposable income. Comparative political economy has shown time and again that these state programs are effective in reducing economic inequality (Bradley et al., 2003; Huber and Stephens, 2014; Kenworthy and Pontusson, 2005). Yet, parties have an incentive to implement social protection policies only if disadvantaged citizens actually turn out to vote. Richer citizens, in contrast, have additional means of making their voices heard since they use a whole range of other ways to engage with politics, such as donating to campaigns, or joining interest groups. As a result, the concerns of the poorer segments of the society are of lesser concern to policy makers, a prediction that the literature on the responsiveness of political systems confirms (Hobolt and Klemmensen, 2005; Giger et al., 2012; Gilens, 2005; Bartels, 2008). In addition,

preferences and interests of poor and rich diverge more strongly in unequal societies (Gilens, 2005; Gallego, 2015), which further depresses participation by lower income groups (Lijphart, 1990; Birch, 2009). This might give rise to a vicious cycle between economic marginalization, unequal voices, and little public effort to combat inequality.

At the same time, we were unable to test the mechanisms reducing turnout rates of the poorer citizens since only a limited number of variables were available when we combined surveys from different sources and across time. This is unfortunate because the mechanisms by which inequality suppresses participation, particularly by the poor, are not fully understood. Insights from the social psychology literature (Jahoda, 1982; Rosenstone, 1982; Adman, 2008) and the insider–outsider debate (in particular Emmenegger et al. (2015), for a review see Schwander (2018)) suggest, for example, political efficacy and feelings of misrepresentation to be at the heart of this fateful compound. This is a fruitful venue for further research. It also links to another missing piece in the jigsaw: the role of party competition as a potential remedy to this link, especially the rise of populist parties. While some work has been done on the effect of competition on the left for mobilizing the poor and the policy position of the main parties of the left (Anderson and Beramendi, 2012), there has so far been little effort to explore the link between inequality, political involvement and the mobilization effort of populist parties. Our—cursory—results, based on the last federal elections in Germany, offer little consolation as populist parties do not appear to be able to break the vicious cycle between economic marginalization and electoral participation. Further systematic research is however warranted.

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## Appendix

### Appendix 1: Macro-level analyses

#### Appendix 1.1: Descriptive statistics and data sources for 21 countries, 1980–2014

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Voter turnout (IDEA)	214	77.0	11.1	53	96
Theil index (EHII)	156	36.1	3.2	29	44
Gini (SWIID)	194	29.3	4.7	17	40
Compulsory voting	214	0.2	0.4	0	1
Presidentialism	198	0.2	0.4	0	1
Index of bicameralism	215	2.4	1.1	1	4
Effective no. of parties	215	4.2	1.6	2	10
Distance 1st and 2nd party (log.)	205	1.9	0.9	0	3
Population (log.)	213	9.8	1.5	6	13
GDP per capita (log.)	199	10.1	0.4	9	11

Variable	Source
Voter turnout (IDEA)	<a href="http://www.idea.int">http://www.idea.int</a>
Theil index (EHII)	<a href="http://utip.lbj.utexas.edu">http://utip.lbj.utexas.edu</a>
Gini (SWIID)	Solt (2016)
Compulsory voting	<a href="http://www.idea.int">http://www.idea.int</a>
Presidentialism	Armingeon et al. (2017)
Index of bicameralism	Armingeon et al. (2017)
Effective no. of parties	Armingeon et al. (2017)
Distance 1st and 2nd party (log.)	Armingeon et al. (2017), own calculation
Population (log.)	Armingeon et al. (2017)
GDP per capita (log.)	Armingeon et al. (2017)

### Appendix 2: Analyses with local German data

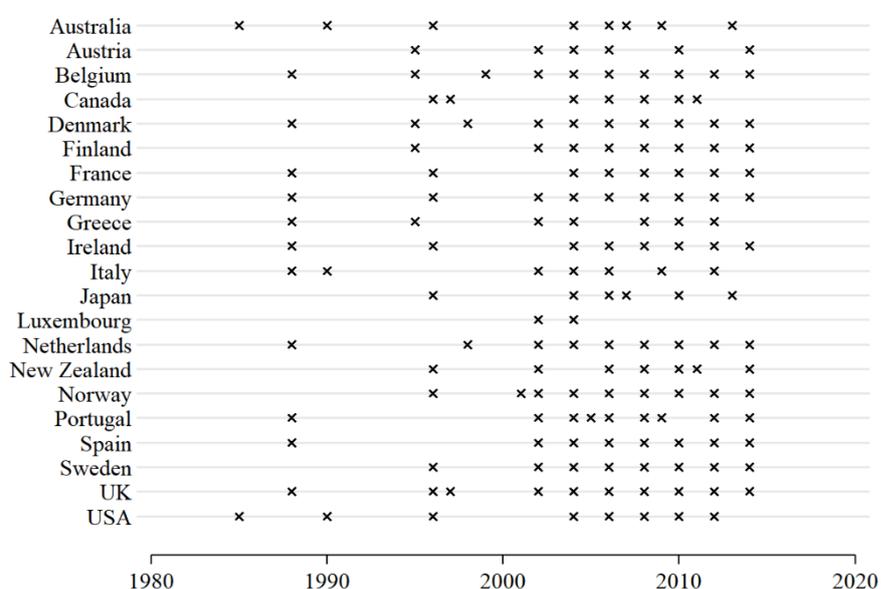
#### Appendix 2.1: Descriptive statistics and data sources, Germany, 1998–2017

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Voter Turnout	2,406	74.8	5.7	55.4	87.6
Inequality	2,406	0.8	0.1	0.0	1.0
Average State income	2,406	18673.4	2690.0	12566.0	23862.0
East–West Dummy	2,406	0.2	0.4	0.0	1.0
Distance 1st and 2nd party (log.)	2,403	2.3	1.1	-2.3	4.1
Population (log.)	2,372	12.0	0.6	10.4	15.1

Variable	Source
Voter Turnout	<a href="http://www.inkar.de">www.inkar.de</a>
Inequality	Regionalatlas Deutschland, own calculations
Average State income	Regionalatlas Deutschland
East–West Dummy	<a href="http://www.inkar.de">www.inkar.de</a>
Distance 1st and 2nd party (log.)	<a href="http://www.inkar.de">www.inkar.de</a>
Population (log.)	<a href="http://www.destatis.de">www.destatis.de</a>

## Appendix 3: Analyses with Surveys

### Appendix 3.1: Survey years used in the analyses



Note: This figure shows for each country which years are covered in the analyses. We have used the following surveys:

EB 30	Eurobarometer 30, 1988
EB 44_1	Eurobarometer 44, 1995
CSES 1-4	Comparative Study of Electoral Systems, modules 1-5, 1996–2016
ISSP	International Social Survey Project, 1985–2010
ESS	European Social Survey, seven waves, 2002–2014

### Appendix 3.2: Descriptive statistics for survey level data

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Female	273,524	0.5	0.5	0	1
Age	272,457	49.4	17.1	18	123
Political interest	235,733	0.6	0.5	0	1
Union member	252,177	0.3	0.4	0	1
Married	170,720	0.6	0.5	0	1
Unemployed	269,881	0.1	0.2	0	1
Education	244,791	0.9	0.8	0	2
Income	251,633	1.9	1.4	0	4
Gini (SWIID)	262,455	29.5	4.1	22	38
Compulsory voting	273,932	0.3	0.7	0	2
Presidentialism	215,139	0.1	0.3	0	1
Index of bicameralism	273,932	2.4	1.1	1	4
Gallagher index of disproportionality	272,725	6.3	5.4	0	25
Effective no. of parties	272,725	4.5	1.7	2	10
Distance 1st and 2nd party	255,320	1.7	0.9	0	3
Population (log.)	267,332	9.9	1.2	6	13
loggdp	216,621	10.3	0.3	9	11

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<sup>i</sup> However, Stockemer and Scruggs include a time variable in their models that shows a significant negative effect on turnout. If inequality rises over time and actually leads to a turnout decline, including a time trend may capture a good deal of what is actually an effect of inequality. Unfortunately, they do not offer a model without the time trend.

<sup>ii</sup> This ties in well with evidence from social psychology that sees lower political efficacy and feelings of misrepresentation among two of the main drivers of political abstention among the disadvantaged (Jahoda, 1982; Rosenstone, 1982; Adman, 2008).

<sup>iii</sup> The countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Norway, the Netherlands, New Zealand, Portugal, Spain, Sweden, the United Kingdom and the United States.

<sup>iv</sup> See <http://utip.lbj.utexas.edu/tutorials.html> for more details on calculating different measures of income inequality.

<sup>v</sup> Due to this inertia, using a difference-in-difference approach does not seem appropriate. Also, the initial level of the dependent variable—voter turnout in 1980—could be a function of income inequality and institutional differences of the time. If we limit the analyses to changes in inequality, the inequality and turnout effect would be lost. The insignificant effect of inequality on participation in the model including a lagged dependent variable—the most dynamic model in the analysis—supports our suspicion that a focus on yearly changes is not well suited to study the inequality–participation nexus.

<sup>vi</sup> For example, in countries with compulsory voting, rising income inequality will have little impact on voter turnout.

<sup>vii</sup> We ran a Hausman test that confirms that a random effects model is more appropriate than a fixed effect-model. In addition, a Breusch-Pagan Lagrange multiplier-test shows that the variance across entities is not zero, which means that we cannot run a simple OLS-regression.

<sup>viii</sup> The regression coefficients are reported in tables 3 and 4 of the supplementary file.

<sup>ix</sup> If we run the analyses separately for each decade, the general pattern is confirmed. There is always a negative effect of income inequality on voter turnout.

<sup>x</sup> See regression table 1 and 2 in the online supplementary file

<sup>xi</sup> Some observations have been lost due to a redrawing of districts during the period.

<sup>xii</sup> The regression coefficients are reported in tables 3 and 4 of the supplementary file.

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<sup>xiii</sup> A closer examination of this relationship is beyond the scope of this paper.

<sup>xiv</sup> See the regression coefficients reported in Table 5 of the supplementary file.

<sup>xv</sup> We also ran multilevel models to reflect the fact that observations within countries and survey-years are not independent of each other. However, the results did not substantially change. Additional analyses are available from the authors.