The Less, the Merrier?

Cohort Size, Welfare State Regimes, and Inequalities in Voter Turnout across Societies

Does cohort size influence voter turnout, and if so under which conditions? Focusing on the role of social stratification, we develop the Easterlin Hypothesis linking relative cohort size to political engagement. Our theoretical framework integrates Easterlin's relative income mechanism and Ryder's cohort socialization with Bourdieu's theory of capital. We test this framework by examining competing hypotheses on the differential impact of Relative Cohort Size on voter turnout across welfare state regimes by fitting multilevel models to European Social Survey data for 26 countries, spanning the 2002-2016 period. Empirical results suggest that members of large cohorts are less likely to vote if they are upwardly mobile. However, this effect is nullified in regimes that promote more equality of life chances through education.

In the 14th Century, the English poet Coulton versed that "*The More, the Merrier*", generating a proverb in widespread use today. But is more really the merrier? Norman Ryder and Richard Easterlin have different positions on this subject, at least as regards birth cohorts and politics. Ryder (1965) envisaged the cohort as the key engine of social change, and articulated that greater cohort size would likely accelerate this change. Easterlin (1978) argued instead that members of larger birth cohorts experience negative consequences in terms of demographic, economic, and socio-political outcomes. Relative income is the crucial mechanism for Easterlin: an abundance of individuals in the workforce of similar age increases their substitutability, thus decreasing their incomes relative to their parents', leading to a plethora of negative outcomes.

The debate on the impact of cohort size has sparked a considerable body of research, focused primarily on family, fertility, and labor market outcomes (Pampel and Peters, 1995; Macunovich and Easterlin, 2010). However, research on the political impact of cohort size is more limited. In this

paper, we aim to contribute to the latter by exploring how political participation of cohorts is shaped by social dynamics. To do so, we develop a theoretical framework that combines social demography, social stratification, and social policy to investigate political outcomes, also in order to re-energize the discussion on the political effects of cohort size in the subfields of political sociology and political demography. More specifically, we focus on the mechanisms linking relative cohort size (RCS) to electoral participation, building on the macro-micro-macro model created by Coleman (1986) and developed as an analytical sociology approach by Hedström and Swedberg (1998).

This framework that connects research on relative cohort size and inequality in voter turnout builds on the works of Ryder (1965, 1985) and Easterlin (1978, 1987). While Ryder did not link cohort size to electoral participation, he articulated how the succession of birth cohorts is the driver of societal transformation. The underlying rationale is that, in a given historical moment, younger cohorts are more flexible than older cohorts, and are thus more able to adapt to social change and, more importantly, to contribute to enact it. Ryder (1965) considered cohort size as crucial: any considerable deviation in cohort size is likely to have a great impact on society. He did not consider this phenomenon as automatic, but rather as a potential for change whose realization is up to the cohort. Ryder (1965) articulated how cohorts can develop common behaviors and attitudes by experiencing traumatic events in a shared fashion. This collective socialization may promote intra-cohort solidarity as a reaction to specific social conditions and phenomena. Research on political socialization has further highlighted the centrality of cohorts for politics, focusing on the formation of socio-political attitudes (Braungart and Braungart, 1986; Alwin and Krosnick, 1991; Jennings and Niemi, 2014; Neundorf and Niemi, 2016). Adapting the reasoning by Ryder (1965) to electoral participation, it may be posited that larger relative cohort size leads to higher participation.

Easterlin (1978, 1987) promotes the opposite position: relatively larger cohort sizes produce higher rates of political alienation. In his seminal contribution, studying the United States between the 1960s and the mid-1970s, Easterlin (1978) measured political alienation as the share of young males (18-24

and 25-34) expressing that political affairs were excessively complex for them, or that common citizens had negligible influence on said affairs. Easterlin articulated the rationale underpinning this relationship in terms of the relative income mechanism. The scarcity of young males in small birth cohorts ensures them better employment and economic opportunities, as empirically observed during the 1940's-1960's in the United States. In contrast, members of relatively larger cohorts faced greater competition for scarce jobs and economic opportunities, and that this translated into inferior opportunities with negative effects in terms of demographic, economic, social, and political outcomes. *Inter alia*, Easterlin drew attention to the negative impact of larger RCS on fertility, unemployment, crime and suicide rates, and lastly on political alienation.

The Easterlin Hypothesis, linking RCS to fertility and labor market outcomes, has sparked a considerable body of research, as reviewed by Pampel and Peters (1995), Macunovich (1998), Jeon and Shields (2005), Waldorf and Byun (2005), Firebaugh and Schroeder (2009), Macunovich and Easterlin (2010), Macunovich (2011), and Aassve, Mencarini, and Sironi (2015). However, the literature focusing on the relationship between RCS and political alienation is not conclusive. Kahn and Mason (1987) challenge Easterlin (1978, 1987), arguing that political alienation among U.S. young males in the 1960s was the consequence of a period effect rather than of a cohort effect. With reference to the perennial scholarly debate concerning the relationship between age, period, and cohort effects, for Kahn and Mason (1987) the political alienation of young males in the 1960s was a distinct symptom of a wider political malaise encompassing the entire U.S. population. Their findings were countered by O'Brien and Gwartney-Gibbs (1989), who fit an age-period-RCS model to the same U.S. dataset employed by Kahn and Mason (1987), and find a substantially significant effect of RCS on political alienation. Therefore, the findings of O'Brien and Gwartney-Gibbs (1989) lend moderately strong support to the Easterlin Hypothesis as regards political alienation. Also focusing on the relationship between RCS and political alienation, the review by Pampel and Peters (1995) conflates political alienation with social anomie, such as with homicide and suicide rates.

Subsequently, academic work on the Easterlin Hypothesis linked to political alienation dwindled. Notably, Macunovich and Easterlin (2010) did not directly address political alienation in their systematic review of the *corpus* of research on the Easterlin Hypothesis. At the same time, political alienation itself rose to the forefront of the literature, albeit focusing on a different facet of the phenomenon.

Verba (1996) and Lijphart (1997) envisage political alienation as the unequal participation of citizens in elections, highlighting the perils it poses for democracy. Building on previous research (Verba, Nie, and Kim, 1987), Verba (1996) explicitly links social stratification to unequal participation. The crux of his argument is the risk of a vicious circle arising between unequal participation and social stratification: the former possibly entailing unequal representation of social strata in political bodies, and the unequal responsiveness of officials to said social strata, with the risk of widening socio-economic differences. Lijphart (1997), concurring with Verba (1996), further highlights how unequal participation in politics, in terms of voter turnout, constitutes the *"greatest dilemma of democracy"*. The debate sparked by these contributions has subsequently focused on the influence of socioeconomic inequality (Jacobs and Skocpol, 2005; Solt, 2008; Lancee and van de Werfhorst, 2012; Kasara and Suryanaryan, 2015; Evans and Tilley, 2017), and education (Gallego, 2007, 2010; Burden, 2009). In addition to the focal Easterlin Hypothesis, a considerable body of work in the field of life course research has linked cohort effects to social and political variables, such as voting behavior and religiosity (Smets, 2016; Elder and George, 2016; Voas and Chaves, 2016).

When linking relative cohort size to voter turnout, we need to understand how the relative income mechanism affects political participation. Savage (2004) provides a crucial insight drawn from political sociology, highlighting how political participation is increasingly influenced by the multiple forms of capital described by Bourdieu (1986), such that economic and cultural capital are increasingly important for political participation. This insight allows us to link the "resources" in the model of participation by Verba *et al.* (1995) with the concept of capital by Bourdieu (1986), in its

different forms. The former argued how the resources underpinning political participation are "*time, money, and civic skills*" (Brady, Verba, and Schlozman, 1995), while Bourdieu (1986) defined as capital "*accumulated labor*", which agents can leverage on to accumulate further capital. The latter distinguished between the economic, cultural, and social forms of capital, ranging from the most to the least convertible into monetary resources.

Applying these concepts may cast new light on the political participation debate, through the analytical lenses of political sociology: on one hand, we integrate sociological explanatory variables with political outcomes (Sartori, 1969) to advance our understanding of the social bases of political behavior (Lipset and Rokkan, 1967; Manza, 2012; Clemens, 2016). On the other hand, we join the emerging field of political demography (Goldstone, Kaufmann, and Toft, 2012), investigating how the relative size of cohorts affects the distribution of political power.

In the following section, we develop this insight in a more detailed theoretical framework.

Relative Cohort Size, Capitalization, and Voter Turnout

Building on Ryder (1965) and Easterlin (1978), we develop two main competing hypotheses: respectively, the relative size of a birth cohort affects voter turnout positively and negatively. However, both components of this relationship are at the macro level, while the act of voting is individual. Therefore, the fundamental relationship of interest blends macro and micro analytical levels, and calls for the adoption of the macro-micro-macro framework proposed by Coleman (1986) as a component of a research program grounding the theory of individual action within macro-social systems. Coleman relies on the approach of methodological individualism, integrating two central concepts: the macro-to-micro relation establishes the impact of macro-social phenomena on the individual, and the micro-to-macro relation captures how the actions of individuals are transformed into macro-social outcomes. Coleman (1986) weaves together these two concepts through a further type of relation: micro-to-micro, elaborating how the characteristics of the individual lead to the

formation of action. Building on Coleman's work, Hedström and Swedberg (1998) developed the social mechanisms underpinning these relations in three categories: situational mechanisms (macro-micro), action formation mechanisms (micro-micro), and transformational mechanisms (micro-macro). We use this framework drawn from analytical sociology to develop our hypotheses.

Figure 1 about here

Situational Mechanisms of Capitalization

First, we address the situational mechanisms: the societal conditions under which the capitalization process is influenced by the social origins of the individual. Secondly, we focus on the micro-micro level, and expand the relative income mechanism into the broader relative capitalization mechanism. Lastly, we examine how voting probabilities affect political participation at the cohort level.

As argued by Hedström and Swedberg (1998), situational mechanisms link macro-social structures to the "*beliefs, desires, and opportunities*" of the individual actor. We build on Pampel (1993), who analysed how the Easterlin Hypothesis and its fertility outcomes are affected by socio-political context. In comparison to the original tests of the Easterlin Hypothesis in the US and Canada, Pampel (1993) found that the detrimental effects on fertility caused by large RCS were considerably weaker in Europe, because social protection institutions mitigate the adverse effects of large RCS on fertility. Generalising the latter argument to the relationship between RCS and voter turnout, we argue that the impact of the former on the latter may be moderated by socio-political institutions. Bourdieu and Passeron (1970) identify two main predictors of educational attainment: social origins, and the degree of selection embedded in the education system. They highlight how the presence of initial streaming or tracking reinforces the impact of social origins on educational destiny. Their insight has been corroborated by a considerable body of research: there is a clear relationship between early tracking and larger inequality of opportunity, as reviewed by Van de Werfhorst and Mijs (2010). We argue that the degree of selection and social origins in the framework of Bourdieu and Passeron (1970)

correspond to the social structure and opportunities in the definition of situational mechanisms by Hedström and Swedberg (1998). Therefore, we posit that the key feature of socio-political institutions is the degree of inequality in the education system.

To systematize the moderating effects of said institutions, we rely on the Worlds of Welfare Capitalism typology developed by Esping-Andersen (1990), classifying Western European countries according to the degree of equality and universalism of their welfare states. This typology features four clusters: Social Democratic (e.g., Sweden), Christian Democrat (e.g., Germany), Post-Coomunist (e.g., Poland)[1], and Liberal (e.g., the United Kingdom), ranging from the most focused on equality to the least focused. These regimes have a direct impact on the life chances of children. As argued by Esping-Andersen (2016), family-friendly welfare systems can correct social inequalities of human and cultural capital: equality-focused education systems can mitigate cognitive and non-cognitive inequalities during early childhood, and inequality in educational attainment during the transition to adulthood. Esping-Andersen (2016) therefore articulates how the strength of educational origins-destination associations is moderated in welfare state regimes that invest in families and education, equalizing life opportunities for children from low social strata. Parental influence on capital accumulation has a central role in research on social stratification, as the accumulation of human and cultural capital commences during early childhood: the social origins of children are closely linked to inequalities in educational attainment and socio-economic success. (Morgan, Alwin, and Griffin, 1979; De Graaf, 1986; Ishida, Muller, and Ridge, 1995; Lucas, 2001; Sullivan, 2002; Elman and O'Rand, 2004; van de Werfhorst, 2007, with Hofstede, 2010; Jæger and Breen, 2016). A considerable strand of scholarship on time-use further shows how more educated parents spend more time with children during early childhood, improving their educational outcomes (Sayer, Gauthier, and Furstenberg, 2004; Dotti Sani and Treas, 2016). Jæger and Breen (2016) further emphasize the key role of childhood and adolescence, by developing and testing a model for the intergenerational

[1] We include Post-Communist regimes in a further cluster relatively to the original by Esping-Andersen (1990), relying on Fenger (2007).

reproduction of cultural capital. They argue that parents invest in cultural capital in a dynamic fashion, combining cultural endowments, teachers' inputs, and educational achievements of the children. We therefore identify welfare state regimes as the situational mechanisms that affect the influence of social origins on opportunities for individual action.

Capitalization and the Action of Voting

We now turn to the micro-to-micro relation: the process where a combination of individual characteristics generates a specific action. In this context, the individual vote in national elections constitutes the action.

In the original Easterlin Hypothesis, the mechanism operating at the individual level was relative income (Easterlin, 1978). However, focusing only on income may limit our understanding of the impact of RCS on the individual probability of voting. Therefore, we first extend the Easterlin Hypothesis to include the forms of capital by Bourdieu (1986). A second extension relates to the timeframe of the mechanism: it starts at birth, as capital accumulates slowly over time (Bourdieu, 1986), whereas Easterlin's (1978) mechanism started with entry in the workforce. Easterlin (1978) himself hinted at this longer arm of early life conditions: a larger cohort size translates into more children per household, thus decreasing the resources that a family can devote to the education of each child. Coleman (1988) explicitly identified those resources as the social and human capital endowments of the family, stressing how education outcomes are jeopardized by a larger number of siblings. Family and education are therefore envisaged as the key venues for the accumulation of capital, in its human (Becker, 1962), cultural (Bourdieu and Passeron, 1970; DiMaggio and Mohr, 1985; Bourdieu, 1986; Erickson, 1996; van de Werfhorst, 2010; Jæger and Breen, 2016), and social forms (Bourdieu, 1986; Coleman, 1988; Portes, 1998; Woolcock, 1998). The role of family and education is crucial to understand the role of RCS: social stratification within the parental generation entails a divergence in the destinies of the children (McLanahan, 2004; McLanahan and Jacobsen,

2015). Following Easterlin, RCS would widen such a divergence: as cohort size increases, the strongest impact is felt by the children from the lower social strata, whose opportunities for capital accumulation are inferior. In contrast, the impact of RCS on capitalization outcomes may be mitigated for children from the higher social strata through the larger capital endowments of their parents. In terms of Ryder (1965), the opposite may occur: adversity may strengthen familial bonds for a larger number of siblings. Given that the Ryderian family is the primary agent of the socialization of children, this experience may generate solidarity and facilitate the coordination for political participation. In our framework, social origins determine exogenously the opportunities of capital accumulation for the individual. The outcomes of this capitalization process lead to the formation of the individual action: voting.

We now articulate how the following capitalization outcomes affect the individual probability of voting: educational attainment, income, labor market experience, and religiosity. Educational attainment represents the prime outcome of the capitalization process. The underlying rationale is that educational attainment is closely intertwined with all forms of capital: Bourdieu (1986) himself considered educational credentials as an institutionalized form of cultural capital, magnifying the rate of conversion of the latter into economic capital, while Coleman (1988) framed educational success as a combined product of human and social capital. As regards individual action, it is well documented that higher educated individuals are more likely to vote (Powell, 1986; Gallego, 2009; Leighley and Nagler, 2014). A second outcome of the capitalization process is income, as stressed by Easterlin (1978). The relationship between income and turnout is well-established in the literature: as argued by Verba (1996), Lijphart (1997), and Solt (2008), membership in the upper strata of the income distribution increases the probability of voting. Thirdly, we rely on Gangl (2006, 2018 with Giustozzi) concerning the effects of unemployment. Gangl (2006) argues how spells of unemployment entail adverse consequences for the individual worker, ranging from long-lasting earnings losses, a permanent decline of career opportunities, social stigma, and being locked into

unemployment. Gangl (2006) describes these consequences as the "scars" of unemployment on the individual. Gangl and Giustozzi (2018) expand the concept of "scars" beyond job prospects, and argue how economic adversities at both macro and micro levels increase the chances of individual political alienation, which we link to a lower probability of voting.[2] As regards religiosity, Durkheim (1912) considered it as a source of both solidarity and social control, leading the former to be considered as a form of social capital (Fukuyama, 2001; King and Furrow, 2004). Furthermore, religiosity is a well-established predictor of individual voter turnout (Macaluso and Wanat, 1979; Smets and Van Ham, 2013). The work by Smidt *et al.* (2003) constitutes a bridge between these bodies of work, as they link the social capital generated by religiosity to greater political participation. We therefore posit that large RCS affects the individual probability of voting through the relative capitalization mechanism. Furthermore, we envisage this mechanism as socially stratified: a larger RCS affects voter turnout overall, but has a larger impact on children from lower social strata.

From Individual to Cohort Voter Turnout

Lastly, we turn to the transformational mechanisms underpinning the micro-to-macro relation between individual action and social outcomes. In our framework, elections aggregate individual votes of cohort members in the cohort voter turnout. As regards interdependence, Easterlin (1978) originally envisaged it as competition for wages: members of larger cohorts face greater competition during their capitalization process, and this results in a lower probability of voting, moderated by welfare regime and social origins. On the contrary, the opposite interdependence mechanism would be of solidarity (Ryder, 1965): when members of larger cohorts are socialized as a collectivity during their capitalization process, they may form a common identity, prompting them to coordinate to change society through politics.

[2] This is in line with research on economic adversity and turnout, which finds that individual unemployment depresses political participation (Rosenstone, 1982; Marx and Nguyen, 2016).

The macro-micro-macro framework we have outlined provides direct guidance for the formulation of hypotheses.

First, we address the macro-macro relation.

Hypothesis 1: *the larger is the relative size of a cohort, the higher (Ryder, 1965) or lower (Easterlin, 1978) is the probability of voting for the members of that cohort.*

Second, we incorporate the role of situational mechanisms, combining the role of socio-political institutions and social origins as theorized by Bourdieu and Passeron (1970).

Hypothesis 2: *the negative (positive) impact of larger RCS on the probability of voting is amplified for individuals with low social origins.* S*aid relationship is mitigated (amplified) in Social Democratic and Christian Democrat regimes, and amplified in Liberal and Post-Communist regimes.*

Third, we examine the effect of capitalization outcomes.

Hypothesis 3: *the negative (positive) impact of larger RCS on the probability of voting is amplified for individuals with low social origins, and who have lower capitalization outcomes. These relationships are mitigated in Social Democratic and Christian Democrat regimes, and amplified in Liberal and Post-Communist regimes.*

Data and Methods

Data Sources

We rely on two main data sources: the European Social Survey, and the International Data Base of the United States Census.

The European Social Survey is a bi-annual pan-European survey, sampling about 50,000 individuals per round. It has been administered to 32 countries across Europe, as of the latest round (2016). We rely on data gathered in Rounds 1-8, addressing questions concerning voter turnout, year of birth, highest education level attained by the respondent, highest level education attained by the highest educated parent of the respondent, household income, gender, migrant status[3], and religiosity. We shall provide the descriptive statistics for the focal dependent and independent variables. Complementing the ESS data, we rely on the International Data Base of the US Census for the single yearly birth cohorts for the 26 countries: birth cohort size, expressed in percent relatively to the total population in the country in a specific year, and in absolute terms. The former variable (*RCS*) constitutes the focal covariate for the present paper.

Descriptive Statistics

We rely on a set of 10 variables, constituted by the dependent variable, seven covariates, and two controls.

While the entire European Social Survey has a cumulative sample size of approximately 352,000 observations *circa* and spans 32 countries, we rely on a subset of 26 countries, which reduces the sample size to 291274 observations after the inclusion of the full set of covariates.

Table 1 about here

[3] The sample only includes citizens that were eligible to vote. Therefore, migrant status refers to only to those respondents that are citizens of the country where elections have been held.

Dependent Variable

Voting is a variable with binary responses, and it refers to the last national elections. The variable Vote is coded as 1 if the respondent has voted in the last national elections, and 0 if the responded has not voted.[4] The choice of a binary variable as the dependent entails that all coefficients will take the form of voting likelihoods, expressed relatively to a baseline.

Explanatory Variables

Let us proceed to examine the seven explanatory variables: Relative Cohort Size, welfare state regime, highest level of education of the parent and of the respondent, household income quintile, being unemployed for more than three months, and religiosity. RCS, welfare state regime, and the highest level of education of the parent represent the initial conditions for the capitalization process to occur. On the other hand, the highest level of education achieved by the respondent, his or her household income quintile, unemployment experience, and religiosity represent outcomes of the capitalization process, and are therefore endogenous to voting behavior, since the respondent played a direct role in achieving those outcomes. As mentioned above, we gathered data on RCS from the International Data Base of the United States Census for each of the 26 countries for the years 2002-2016 after the full set of covariates and controls is included. The data base provides cohort size by age group, for each country and year. We obtained the year of birth from the equation Period - Age = Cohort for each country and year, and proceeded to match RCS with their cohort members in the ESS through the year of birth variable in the latter dataset. [5] RCS ranges from a minimum of 0.1% to a maximum of 2.1% (see Figure 2). However, the minima and maxima vary across the countries

[4] The variable voting has been recoded from *vote* in the ESS, which featured an additional response: that of not being eligible to vote in national elections. The rationale underpinning this recoding is to account for potential confounding factors, thus excluding from the analysis those that were not eligible to vote.

[5] The cohort size is measured in terms of the overall population of the country for each of the ESS round years (2002-2016), in order to account for changes in the overall population, and in the age structure.

clustered in the welfare state regimes. In order to improve comparability and avoid any out of sample prediction, we select the values of 0.6% (the 5th percentile) and 1.8% (the 99th percentile) as minimum and maximum values for relative cohort size, which are close to the second and 99th percentile for RCS in any welfare state regime.

Figure 2 about here

The second focal explanatory variable captures welfare state regime. We incorporate in this variable the original typology of the Three Worlds of Welfare Capitalism developed by Esping-Andersen (1990), clustering countries in the Social Democratic (Denmark, Finland, the Netherlands, Norway, and Sweden), Christian Democrat (Austria, Cyprus, France, Germany, Greece, Italy, Spain, and Portugal), Liberal (Ireland, Switzerland, and the United Kingdom). We adapt this typology in three ways. Firstly, we address the countries formerly belonging to the U.S.S.R., relying on Fenger (2007), who extended the typology by identifying three main sub-clusters: a Central-Eastern European cluster (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, and Slovenia), a core formerly Soviet cluster (Belarus, Russia, and Ukraine), and an Eastern Balkans-Caucasian cluster (Moldova, Romania, and Georgia). Here we include only the Central and Eastern European sub-cluster, as it features the relatively most developed welfare states within the Post-Communist cluster (Fenger, 2007). The second and third modifications are related. The cantonal system of the Swiss Confederation entails considerable welfare regime variation within the subnational level of the same country (Armingeon, Bertozzi, Bonoli, 2004). For this reason, we separate Switzerland from the Liberal cluster with Ireland and the United Kingdom, and place it in a control cluster. We further include Israel in such a cluster, as the latter is difficult to fit into any welfare state regime typology. Tarshish (2017) regards Israel as combining features from Liberal and Social Democratic welfare state regimes, while Gal (2010) regards it as part of an "extended Mediterranean" version of the Christian Democrat regime. However, due to its peculiarities we place it in the control cluster with Switzerland, which will not be the focus of our analyses.

As regards social origins and the respondent's educational attainment, we rely on the dominance model developed by Erikson (1984): we choose the highest level of education achieved by the highest educated parent of the individual as a proxy of social origins for the individual, and therefore as an indicator of the opportunities for the capitalization process[6]. In contrast, the highest level of education attained by the respondent is envisaged as the outcome of the capitalization process. Therefore, examining the educational attainments of children, relative to their parents', may constitute a reasonable proxy for intergenerational capital mobility. Our education variables take values from 1 to 5, each relating to specific levels in the ES-ISCED framework. Our variables differ from the ES-ISCED scale insofar as they conflate the lower and upper tier secondary education levels in a single level, and similarly conflate the lower (B.Sc./B.A) and upper (M.Sc./M.A) tiers of tertiary education. [7] We report the mobility matrix in the Supplementary Materials Table SM1, exhibiting the frequencies of the combinations between parental and own level of education. We choose the extreme combinations of lower than secondary degree and any tertiary degree for our analyses, which collectively amount to 24.78% of the cases in the overall sample .[8] For purposes of robustness, we extend the analyses by examining the effects of high school education at both the parental and individual level. Once we do so, the examined combinations of parental and respondent's education correspond to 62.62% of the overall sample.

[6] An alternative measure for parental education is the modified dominance model by Korupp, Ganzeboom, and Van Der Lippe (2002), which takes into account also the level of education of the least-educated parent. However, using this model decreases our sample size to 271043 observations, while the results are equivalent to the baseline specification.

[7] More specifically, value 1 of our variables refers to individuals with less than lower secondary education (ES-ISCED I); value 2 of our variables refers to individuals with lower secondary education (ES-ISCED II); value 3 of our variables refers to individuals with lower and upper tier higher secondary education (ES-ISCED IIIa and IIIb); value 4 refers to individuals with post-secondary but non-tertiary education (ES-ISCED IV); and finally value 5 of our variables refers to individuals with any tertiary education and above (ES-ISCED Va, Vb, VI).

[8] More specifically, there are 32,015 observations (10.99%) for the 1-1 combination, 508 (0.17%) for the 5-1 (downwardly mobile) combination, 12,246 (4.2%) for the 1-5 (upwardly mobile) combination, and 27,427 (9.42%) for the 5-5 combination. The very low sample size for the downwardly mobile is in line with our expectations, and is not the focus of our analysis.

The variable measuring household income quintile is a further measure of social stratification. However, it is less useful than education for our purposes for two main reasons: *in primis,* the variable does not capture whether the respondent is the primary breadwinner of the household. Hence, it cannot disentangle social origins and achieved socio-economic status. Secondly, the variable features more than 80,000 missing values. Therefore, we include it in our specification solely as a control, by recoding the missing values into "quintile zero".

As regards the variable capturing unemployment scarring, we rely on the Ever Unemployed for more than 3 months, a recode of *uemp3m* in the ESS. 3 months may not constitute the ideal minimum threshold of duration to capture scarring effects. However, this variable is the only one in the dataset that is consistent across countries and years, and that spans across the entire lifetime of the respondent, thus being able to capture the effect of unemployment spells in past decades.

Lastly, we include the Religious variable, which is a recode of *rlgblg* in the European Social Survey. It captures whether the respondent self-identifies as belonging to any religious denomination, or not being religious at all. Therefore, this variable is a binary dummy variable.

Analytical Strategy

Our analytical strategy is to fit multilevel linear regression models with random effects (or multilevel linear model) to data nested at the country level. We address two main issues concerning this methodological choice: the use of a linear model over a logistic regression model, and the choice of Random Effects over Fixed Effects. We are fully aware of the limitations posed by linear models when used for statistical inquiry on a binary dependent variable, due to homoskedasticity and serial independence (Aldrich, Nelson, and Adler, 1984). However, as argued by Bryan and Jenkins (2015), multilevel models require at least 30 countries for the logistic regression to produce valid estimates. Given that the number of countries selected for analysis are 26, we therefore rely on linear regressions. The choice of a linear model is further defensible on the grounds of the distribution of

the dependent variable. As stated by Von Hippel (2015), linear regression is statistically equivalent to logistic regression if the binary dependent variable has a distribution of at least 20%-80%. In the context of this paper, the distribution is 22.6% for those that did not vote, and 77.4% for those that voted in national elections.

Therefore, we address the limitations of linear models by employing two modifications. On one hand, we mitigate the heteroskedasticity and serial correlation issues for standard errors by computing standard errors according to country clusters, which should decrease the bias of standard errors. Secondly, we rely on marginal effects with factor variables and their graphical representation in order to facilitate the interpretation of probability estimates and interaction terms, as recommended by Liao (1994), Brambor, Clark, Golder (2006), and Williams (2012).

Lastly, we justify the choice of random effects over fixed effects since welfare state regimes are largely time-invariant (Greene, 2005).

Model Selection

Hypotheses 3 features a model with interactions between covariates: a four-way interaction between RCS, welfare state regime, and highest level of education of the respondent and the respondent's parent. This four-way interaction has been identified conceptually, relying on the macro-micro-macro research framework depicted in Figure 1. However, we could potentially extend the exogenous three-way interaction between RCS, WSR, and highest level of education of the respondent's parent to any of the other outcomes of the capitalization process. In order to validate our choice of education as the prime capitalization outcome from a statistical standpoint, we report in Table 2 the Akaike and Bayesian Information Criteria for all interactions of the stratification variables with RCS and welfare state regime, up to the four-way level.

Table 2 about here

We report AIC and BIC values in descending order for each category, as the lowest values indicate the preferable model. For the four-way interactions, the preferable model is the one including the interaction between RCS, WSR, and the education level of the respondents and their parents. While the Akaike and Bayesian Information Criteria have different features (Vrieze, 2012), they concur in validating the four-way interaction as the preferable model.

Equations

We conclude this section with formal equations for the statistical test of Hypothesis 1-3, relying on multilevel linear models for panel data at the country level. *RCS* stands for Relative Cohort Size, *WSR* stands for Welfare State Regime, and *Par.Education* stands for the highest level of education of the highest educated parent of the respondent. **T** stands for the vector of the gender, and native status controls. The capitalization outcomes are captured by the vector **Z**, where *Education* stands for the highest level of education of the respondent, and are only included in Hypothesis 3. **Interactions** captures the cross-level interactions between Welfare State Regime (at the country level), RCS (at the country and year level), Par. Education and Education (at the individual level). The letter **μ** stands for survey year fixed effects, and **u** for country random effects.

$$Vote_{ijt} = \gamma_{000} + \gamma_{001}RCS_{jt} + \gamma_{020}WSR_j + \gamma_{100}\text{Par. Education}_{ijt} + \gamma_{n00}\mathbf{T}_{ijt} + \boldsymbol{\mu}_{002} + \mathbf{u}_{030} + \varepsilon_{ijt} \quad (1)$$

$$Vote = \gamma_{000} + \gamma_{001}RCS_{jt} + \gamma_{020}WSR_j + \gamma_{100}\text{Par. Education}_{ijt} + \gamma_{n00}\mathbf{T}_{ijt} + \beta_{n00}\mathbf{Z}_{ijt} + \textbf{Interactions} + \boldsymbol{\mu}_{002} + \mathbf{u}_{030} + \varepsilon_{ijt} \quad (2)$$

Interactions = (*RCSxWSR*) + (*RCSxEducation*) + (*RCSxPar.Education*) + (*Education x F. Education)* + (*WSR x Education*) + (*WSR x Par.Education*) + (*RCS x Education x Par.Education*) + (RCS x *WSR x Education*) + (RCS x *WSR x Education*) + (*WSR x Education x Par.Education)* + (*RCS x WSR x Education x Par.Education*)

Results

Table 3 reports the findings from the statistical test of Hypotheses 1 and 2, while Tables 4 and 5 report the results for Hypothesis 3. We analyse each of the Hypotheses in the respective subsections.

Table 3 about here

Testing Hypothesis 1

The first column in Table 3 reports coefficients for the Easterlin Hypothesis on Relative Cohort Size and voter turnout. Here, an increase of 1% in RCS decreases voter turnout by 9.3% ($p<0.001$). There are also statistically significant differences in voter turnout on the basis of welfare state regime, with the Christian Democrat regime as the baseline. Relatively to said baseline, citizens of Social Democratic regimes exhibit a 5.5% ($p<0.05$) increase in probability of voting. The citizens of any other regime report significant decreases in the probability of voting, ranging from -6.5% in the Liberal regime ($p<0.01$) to -11.6% in the Post-Communist Regime ($p<0.001$). The coefficient for the control regime is not significant. Parental education appears instead to exert no statistically significant effect on voter turnout. Turning to control variables, women are marginally more likely to vote than men, but this difference is not statistically significant. In contrast, being a native citizen is associated with a 16.7% increase relatively to respondents with a migrant background ($p<0.001$).

Prima facie, the findings reported in the first column of Table 3 lend initial support to the Easterlin hypothesis: a larger RCS tends to decrease the probability of voting for its cohort members. In order to better understand the magnitude of this effect, we report in Figure 3 the average marginal effects of RCS on probability of voting.

Figure 3 about here

As RCS increases from 0.6% to 1.8%, the change in the independent variable amounts to 1.2%, which corresponds to 3.7 standard deviations of RCS. The change in RCS entails a drop in the probability of voting from 83.8% to 72.6%, amounting to a change of 11.2%. Given that a standard deviation for the dependent variable amounts to 41.8%, such a change in RCS corresponds to 27% of a SD in the dependent variable. Consequently, an increase of a single SD for RCS (0.322%) is associated with a decrease of 7.2% SD in the probability of voting. Therefore, a larger RCS decreases overall voter turnout, albeit with a limited effect size.

Testing Hypothesis 2

The second column of Table 3 reports the results from the statistical test of Hypothesis 2. As regards the covariates and controls, the main changes relative to the model of Hypothesis 1 are related to the coefficients of RCS and welfare regime. Relatively to the H1 model, RCS has lost magnitude (-6.6%, $p<0.01$), while the coefficient for the Social Democratic regimes has lost significance. Parental education shows instead to have a significant impact on the probability of voting, after the inclusion of interactions.

Hence, we focus on the interactions between RCS and specific welfare state regimes. The interaction between RCS and Christian Democrat Regime constitutes the baseline. As RCS increases, the probability of voting decreases in a statistically significant fashion for the Liberal and control regimes, but not for the Social Democratic and Post-Communist regimes. More specifically, a larger RCS entails that citizens of the Liberal countries vote 16% less than the baseline ($p<0.001$), a coefficient that changes to -23.2% for citizens of Israel and Switzerland ($p<0.001$). In order to better understand how welfare state regimes moderate the impact of a larger RCS on cohort voter turnout,

we report in Figure 4 the Average Marginal Effects on the probability of voting driven by RCS and Welfare State Regime.[9]

Figure 4 about here

With respect to the Social Democratic and Christian Democrat regimes, the increase in RCS does not affect the probability of voting in a statistically significant manner, as the 95% Confidence Intervals overlap. In contrast, citizens of the Liberal regimes exhibit a drop from 88.9% to 61.6%, amounting to a considerable 27.3% decrease in the probability of voting as RCS increases from the minimum to the maximum of the range. In terms of effect size, a change of a SD in the independent variable entails a decrease amounting to a 17.7% SD for the probability of voting. Lastly, citizens of Post-Communist regimes exhibit a drop from 74.6% to 64.9% as RCS increases from the minimum to the maximum. Considering this drop in terms of effect size, it amounts to 6.3% of a SD in the probability of voting.

When turning to the three-way interaction capturing the effect of situational mechanisms between RCS, welfare regime, and Parental education, all the interaction coefficients are smaller than the baseline and statistically significant, with the only exception of the control regime. As before, we report in Figure 5 the AME on the probability of voting driven by the three-way interaction.

Figure 5 about here

Social origins of the individual do not appear to influence any statistically significant differences within welfare regimes. This is an indication that relying solely on the situational mechanisms does not suffice in capturing the underlying drivers of the action of voting. Therefore, we broaden our scope in Hypothesis 3.

[9] As articulated in the Data and Methods section, we do not focus on the control regime, due to the peculiarities of the Israel welfare system and Swiss cantonal system.

Testing Hypothesis 3

In Hypothesis 3, we test a model including RCS, the situational mechanism (welfare regime and individual social origins), and the action formation mechanism through the outcomes of the capitalization process. As noted, we envisage education as the prime outcome of such a process, and include it in the focal four-way interaction. Tables 4 and 5 report the empirical findings for Hypothesis 3 separately. For purposes of graphical clarity, we report in Table 4 the same specification of Hypotheses 1 and 2 plus the capitalization variables, while we report in Table 5 the additional interactions leading to the focal four-way interaction.

Table 4 about here

Table 5 about here

Compared to the previous specifications, RCS is still negative and statistically significant. The variables capturing the outcomes of the capitalization process are all statistically significant with $p<0.001$, with the exception of the education of the respondent. Membership in higher income quintiles (from 0 to 5) is associated with a 1.5% increase in the probability of voting. Those reporting unemployment 'scars' are 4% less likely to vote than those who do not. Being religious increases the probability of voting by 7.4%. Turning to the controls, there are no considerable changes compared to the previous specification. Let us therefore turn to the interactions reported in Table 5, focusing on the four-way interactions validated by the Akaike and Bayesian Information Criteria as the preferred model, as explained in Model Selection and reported in Table 2.

Such a four-way interaction examines the combined effect of RCS, highest education level of the respondent's parent and of the respondent, and welfare state regime on the probability of voting. This focal four-way interaction is associated with a -1.2% coefficient ($p<0.05$) for the Social Democratic regime, and 1.8% ($p<0.001$) for the Liberal Regime, and 3.1% for the Post-Communist regime.

To better interpret the meaning of these statistical results, we depict in Figures 6 and 7 the Average Marginal Effects on the probability of voting entailed by the four-way interactions. For purposes of clarity we report in Figure 6 the AME for individuals with low educated parents, and in Figure 7 the AME for those with high educated parents.[10]

Figure 6 about here

To begin with, let us assess what happens as RCS increases across the welfare state regimes for children of parents with a low level of education. As RCS increases, citizens with high education levels show considerable drops in the probability of voting in the Liberal and Post-Communist regimes. Respectively, these drops amount to 25.4% and 23.5% in the likelihood of voting, with effect sizes of 16.4% SD and 15.2% SD. In contrast, upwardly mobile citizens in the Social Democratic and Christian Democrat regimes show no statistically significant reaction to the increase in RCS. It should be noted that when RCS amounts to 0.6%, there are no differences in the probability of voting across welfare regimes for individuals with a high level of education. However, the increase in RCS entails a divergence in probabilities of voting, with citizens of the Liberal and Post-Communist exhibiting likelihoods of voting around 70%, which are 15% and 20% lower than those of citizens of the Christian Democrat and Social Democratic regimes, respectively. At the 99th percentile of RCS, upwardly mobile citizens in the Liberal regime are statistically equivalent to those that have low social origins and low educational attainments in the Social Democratic regime. This disparity is possibly due to the strong emphasis of the latter regime on the equalisation of life chances.

For individuals with low levels of education, the increase in RCS entails no statistically significant change in the probability of voting. The citizens of Liberal regimes are the exception, showing a

[10] Here, we focus separately on the extreme cases of the education variables, for the purpose of clarity. For an immediate graphical comparison of Figures 6 and 7, please refer to Figure SM2 in the Supplementary Materials. In Figure SM3 present in the Supplementary Materials, we report also the cases for high school education (value 3 in our variable) in a 3-by-4 matrix. Essentially, the "middle" educated are an intermediate case between the low and highly educated, without major deviations from the patterns shown in Figures 5 and 6.

30.6% decrease in voting, amounting to 19.8% of a SD in the dependent variable. As regards different education levels, it is notable how the increase in RCS entails comparable drops for citizens of the Liberal regime for both high and low-educated individuals. In the Post-Communist regime, the increase in RCS nullifies the influence of high educational attainment on the probability of voting: from a considerable 30% to a non-statistically significant 0.7%, compared to low-educated individuals with the same origins.

Figure 7 about here

Let us now turn to individuals whose parents have a high level of educational attainment. We highlight two main patterns: on one hand, individuals with high social origins show no statistically significant reaction to the increase in RCS, except for citizens of Liberal regimes. More specifically, the increase in RCS entails drops of 23.8% and 48.5% respectively for high and low-educated individuals. The second pattern is that the increase in RCS widens the gap in probability of voting between high and low-educated individuals in three regimes, while compressing this gap in the Christian Democrat regime. As explained in the section on the independent variables, downwardly mobile individuals amount only to 0.2% of the overall sample. We should therefore not emphasize its importance.

A third pattern emerges when comparing the impact of RCS for citizens from low and high social origins in the Post-Communist regime. For individuals with low social origins, the increase in RCS compresses any differences in the probability of voting driven by educational attainments. For individuals with high social origins, the opposite occurs: the increase in RCS widens the gap in the probability of voting driven by educational attainment.

Discussion

Can social policy influence the challenge posed by the influx of large cohorts into the population, as noted by Ryder (1965)? Considering our results, we claim that it does, at least for the 26 European countries examined in the 2002-2016 timeframe. In Hypothesis 1, we tested the macro-macro relationship between larger RCS and voter turnout at an overall level. Given the results reported in Table 3 and depicted in Figure 3, we find a small but significant decrease in the probability of voting. This lends support to the original Easterlin Hypothesis of political alienation, but does not identify the social mechanisms and conditions underpinning such a relationship. In Hypothesis 2, we therefore tested the impact of situational mechanisms, as defined by Hedström and Swedberg (1998). In our framework, we identified the social structure and individual opportunities in the degree of educational selection and individual social origins theorised by Bourdieu and Passeron (1970) as the joint drivers of educational success. We elaborated on the latter in Figure 4, showing how the impact of RCS changes across socio-political contexts: the negative effects on the probability of voting are not significant in the Social Democratic regime, whereas they range from moderate in the Christian Democratic to substantial in the Liberal regime. However, extending the interaction to include Parental education does not provide any additional insight into the action of voting. As articulated in our framework, we need to include the outcomes of the capitalization process.

We did this in Figures 6 and 7, in which we explored the relative capitalization mechanism, highlighting two main patterns.

First, we focused on upwardly mobile individuals. For this group, RCS does not affect the probability of voting in the Social Democratic and Christian Democrat regimes, while it is associated with considerable drops in the Liberal and Post-Communist regimes. This pattern is particularly informative as regards our initial expectations: in regimes that are less dedicated to equalising life opportunities, a large RCS increases the influence of social origins on voter turnout. At the 99th

percentile of RCS, upwardly mobile individuals are 15% and 20% less likely to vote in Liberal and Post-Communist Regimes than in Christian Democrat and Social Democratic regimes. Within the Liberal welfare regime, upwardly mobile individuals show a drop in the probability of voting that is comparable to that of low-educated individuals. In the Post-Communist regime, the change in RCS magnifies the influence of low social origins to the point that there is only a non-statistically significant difference in the probability of voting between those holding a tertiary degree, and those that have not completed lower secondary education. In the Liberal and Post-Communist regimes, a larger RCS lowers the probability of voting for upwardly mobile individuals.

In isolation, neither the opportunities nor the outcome of the capitalization process explain the action of voting. We need to examine the outcome relative to social origins. The fact that upwardly mobile individuals are considerably less likely to vote when RCS is high seems counter-intuitive, but can be explained with the help of Bourdieu and Passeron (1970). Focusing on the French education system, they explore the counter-intuitive finding of working-class students exhibiting greater success in tertiary education than upper- and middle-class students. They explain this in light of the considerably harder path that working-class students need to take in order to access higher education, given their lower starting level of cultural capital. In their own words "[working class students] *coming from a class for which this route is more improbable, they have had to manifest exceptional qualities in order to be channelled in this direction and to persist in it.*" In our framework, we argue that the decrease in the probability of voting exhibited by upwardly mobile individuals when RCS is very high is related to the hardships experienced in achieving a tertiary educational credential while competing with many more cohort members, and coming from a household with a low level of capital. This augments the political alienation of the individual, similarly to the effect on political trust driven by socio-economic adversity argued by Gangl and Giustozzi (2018). However, this does not occur when the education system is focused on equalising life chances as in the Social Democratic regime, which therefore decreases the inequality in degree of selection, weakening the influence of social origins on

the outcomes of the capitalization process. In terms of Ryder (1965), it is plausible that social policy mitigates competition and increases solidarity, entailing a non-statistically significant reaction to RCS.

The second pattern concerns individuals from high social origins and high educational attainment: across the Social Democratic, Christian Democrat, and Post-Communist regimes, their probability of voting is not affected by RCS (in terms of statistical significance). Contrary to our expectations, the opposite holds in the Liberal regime: an increase in RCS entails a drop of 23.8% in the likelihood of voting. Broadly speaking, citizens of Liberal regimes show considerable drops in the probability of voting as RCS increases, for any combination of social origins and own educational attainment. A possible explanation may be the high degree of educational stratification in the United Kingdom (Croxford and Raffe, 2013). Similarly to upwardly mobile individuals, if access to higher education is very competitive, a larger RCS may depress the probability of voting even among those with high social origins.

In short, the impact of RCS is most profound in the Liberal regime, which shares several features with the North American context originally studied by Easterlin (1978; 1987).

Conclusion

Building on Ryder (1965) and Easterlin (1978), we have explored the competing hypotheses on cohort size in the domain of political participation, by combining the cohort framework with the body of research on unequal political participation (Verba, 1996; Lijphart, 1997). We introduced social stratification as the conceptual bridge between the two, and thus adapted the original relative income mechanism by Easterlin (1978) into a relative capitalization mechanism based on Bourdieu's (1986) theory of capital. In doing so, we have explicitly shifted the timeframe dynamics: the influx of large cohorts entails consequences as early as birth, affecting life chances in the family and educational attainment well before entry in the workforce. We built these modifications into a macro-micro-macro

research framework, as outlined by Coleman (1986) and developed by Hedström and Swedberg (1998), which we relied upon for the formulation of our three Hypotheses.

The empirical results suggest that the modified Easterlin Hypothesis is supported by the data, while the hypothesis inspired by Ryder (1965) is not. However, socio-political context plays a crucial role, confirming the insights by Bourdieu and Passeron (1970), Pampel (1993) and Esping-Andersen (2016): in welfare regimes that stand out in terms of equalizing life chances, the impact of RCS on voter turnout is non-significant. This is exemplified by the upwardly mobile individuals, whose probabilities of voting are statistically equivalent across regimes when RCS is at the 5th percentile. In contrast, those probabilities of voting diverge radically when RCS reaches the 99th percentile, with upwardly mobile citizens in Liberal and Post-Communist countries voting 15% to 20% less compared to their peers in Christian Democrat and Social Democratic regimes. Our results therefore suggest that social policies may be crucial in addressing both social and political inequalities faced by members of large cohorts, fostering solidarity (Ryder, 1965) and reducing competition. "*The Less, the Merrier*" narrative described by Easterlin (1978) is not universal. These findings may contribute to the subfield of political sociology, shedding further light on the social bases of political behavior, and more specifically to the emerging stream of political demography, by highlighting the centrality of cohorts not only for social change, but also for political outcomes.

Future research may formally test the impact of specific policies on the focal relationship of interest, for instance performing cluster analysis focusing more specifically on social investment policies. Our macro-micro-macro research framework could be modified to study more classic demographic and social stratification outcomes, such as fertility, labor market status, and social anomie. Finally, the competing hypotheses built on Ryder and Easterlin regarding electoral participation may be tested in additional OECD countries and in less advanced democratic countries, assessing the role of cohort size and socio-political context outside the borders of North America and the Old World.

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Tables

Table 1 – Descriptive Statistics

Variable	N	Mean	St.dev	Min	Max
Dependent Variable					
Vote	291,274	0.774	0.418	0	1
Independent Variables					
Relative Cohort Size	291,274	1.24	0.322	0.1	2
Welfare State Regime	291,274	2.75	1.30	1	5
Education of Respondent	291,274	3.16	1.32	1	5
Parental Education	291,274	2.53	1.38	1	5
Household Income Quintile	291,274	2.19	1.76	0	5
Ever Unemployed for more than 3 months	291,274	0.275	0.446	0	1
Religious	291,274	0.635	0.481	0	1
Gender	291,274	0.463	0.498	0	1
Native	291,274	0.929	0.257	0	1

Table 2 – Model Selection

Model	AIC	BIC
Main Effects	293241.4	293474.2
Two-way Interactions		
RCS x Ever Unemployed	293241.5	293484.9
RCS x Income Quintile	293219.3	293462.6
RCS x Parental Education	293188.8	293432.2
RCS x Education	292153.4	292428.5
RCS x Welfare State Regime	293166.7	293410.1
Three-way Interactions		
RCS x WSR x Ever Unemployed	292107.9	292478.3
RCS x WSR x Income Quintile	292100	292470.3
RCS x WSR x Religious	291955.1	292325.5
RCS x WSR x Parental Education	291800.7	292171.1
RCS x WSR x Education	291318.4	291688.8
Four-way Interactions		
RCS x WSR x Income Quintile x Ever Unemployed	292037.9	292609.3
RCS x WSR x Religious x Ever Unemployed	291875.5	292446.9
RCS x WSR x Religious x Income Quintile	291826.1	292397.5
RCS x WSR x Parental x Ever Unemployed	291726.8	292298.3
RCS x WSR x Parental x Income Quintile	291665.6	292237
RCS x WSR x Religious x Parental Education	291356.2	291927.7
RCS x WSR x Education x Income Quintile	291252.6	291824.1
RCS x WSR x Education x Ever Unemployed	291193.2	291764.7
RCS x WSR x Religious x Education	290739.6	291311
RCS x WSR x Education x Parental Education	290366.8	290938.2

Bayesian Information Criteria computed with N=291274. AIC and BIC reported in descending order.

Table 3 – Hypotheses 1 and 2

	(1) Vote	(2) Vote
Relative Cohort Size (RCS)	-0.093***	-0.066**
	(0.023)	(0.021)
Welfare State Regime		
Social Democratic	0.055*	0.031
	(0.026)	(0.028)
Liberal	-0.065**	0.140***
	(0.024)	(0.0267)
Post-Communist	-0.116***	-0.095*
	(0.029)	(0.045)
Other (CH, IL)	-0.061	0.165
	(0.056)	(0.087)
Parental Education	0.004	-0.028*
	(0.003)	(0.011)
RCS x Welfare State Regime		
RCS x Social Democratic		0.020
		(0.026)
RCS x Liberal		-0.160***
		(0.039)
RCS x Post-Communist		-0.001
		(0.042)
RCS x Other (CH, IL)		-0.232***
		(0.045)
RCS x Parental Education		0.025***
		(0.0022)
Parental Education x Welfare State Regime		
Parental Education x Social Democratic		0.025*
		(0.012)
Parental Education x Liberal		0.031**
		(0.012)
Parental Education x Post-Communist		0.032
		(0.021)
Parental Education x Other (CH, IL)		0.032
		(0.017)
RCS x Parental Education x Welfare State Regime		
RCS x Parental Education x Social Democratic		-0.017**
		(0.006)
RCS x Parental Education x Liberal		-0.026*
		(0.010)
RCS x Parental Education x Post-Communist		-0.031*
		(0.013)
RCS x Parental Education x Other (CH, IL)		-0.009
		(0.009)
Gender	0.004	0.004
	(0.005)	(0.005)
Native	0.167***	0.167***
	(0.030)	(0.024)
Constant	0.769***	0.729***
	(0.045)	(0.036)
N	291274	291274
Bayesian Information Criterion (BIC)	302764.8	301616.2

Cluster-robust standard errors in parentheses, by country

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4 – Hypothesis 3 – Core Model

	H3 Vote
Relative Cohort Size (RCS)	-0.111***
	(0.031)
Welfare State Regime	
Social Democratic	-0.041
	(0.041)
Liberal	0.051
	(0.042)
Post-Communist	-0.417***
	(0.092)
Other (CH, IL)	0.095*
	(0.038)
Parental Education	-0.089***
	(0.026)
Education of Respondent	-0.007
	(0.011)
Household Income Quintile	0.015***
	(0.002)
Ever Unemployed for more than 3 months	-0.041***
	(0.007)
Religious	0.074***
	(0.011)
RCS x Welfare State Regime	
RCS x Social Democratic	0.045
	(0.048)
RCS x Liberal	-0.107
	(0.062)
RCS x Post-Communist	0.304***
	(0.066)
RCS x Other (CH, IL)	-0.226***
	(0.064)
Parental Education x Welfare State Regime	
Parental Education x Social Democratic	0.079**
	(0.028)
Parental Education x Liberal	0.106***
	(0.026)
Parental Education x Post-Communist	0.098
	(0.053)
Parental Education x Other (CH, IL)	0.044
	(0.090)
RCS x Parental Education x Welfare State Regime	
RCS x Parental Education x Social Democratic	-0.053**
	(0.020)
RCS x Parental Education x Liberal	-0.087***
	(0.021)
RCS x Parental Education x Post-Communist	-0.122***
	(0.032)
RCS x Parental Education x Other (CH, IL)	-0.043
	(0.071)
Gender	0.009*
	(0.004)
Native	0.169***
	(0.024)
Constant	0.702***
	(0.040)
N	291274
Bayesian Information Criterion (BIC)	290938.2

Cluster-robust standard errors in parentheses, by country

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5 – Continuation of Table 4 – Hypothesis 3 – Additional Interactions

	H3 Vote
RCS x Education of Respondent	0.019*
	(0.008)
Parental Education x Education of Respondent	0.017*
	(0.008)
RCS x Parental Education	0.039**
	(0.015)
Education of Respondent x Welfare State Regime	
Education x Social Democratic	0.029*
	(0.013)
Education x Liberal	0.033*
	(0.015)
Education x Post-Communist	0.131***
	(0.023)
Education x Other (IL, CH)	0.039*
	(0.018)
RCS x Education of Respondent x Welfare State Regime	
RCS x Education x Social Democratic	-0.015
	(0.014)
RCS x Education x Liberal	-0.018
	(0.012)
RCS x Education x Post-Communist	-0.105***
	(0.013)
RCS x Education x Other (CH, IL)	-0.014
	(0.022)
RCS x Parental Education x Education of Respondent	-0.007
	(0.005)
Parental Education x Education of Respondent x Welfare State Regime	
Parental Education x Education of Respondent x Social Democratic	-0.018*
	(0.009)
Parental Education x Education of Respondent x Liberal	-0.023**
	(0.008)
Parental Education x Education of Respondent x Post-Communist	-0.030*
	(0.013)
Parental Education x Education of Respondent x Other (CH, IL)	-0.012
	(0.020)
RCS x Parental Education x Education of Respondent x Welfare State Regime	
RCS x Parental Education x Education of Respondent x Social Democratic	0.012*
	(0.006)
RCS x Parental Education x Education of Respondent x Liberal	0.018***
	(0.005)
RCS x Parental Education x Education of Respondent x Post-Communist	0.031***
	(0.007)
RCS x Parental Education x Education of Respondent x Other (CH, IL)	0.014
	(0.017)
N	291274
Bayesian Information Criterion (BIC)	290938.2

Cluster-robust standard errors in parentheses, by country

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figures

Figure 1 - Macro-micro-macro Research Framework

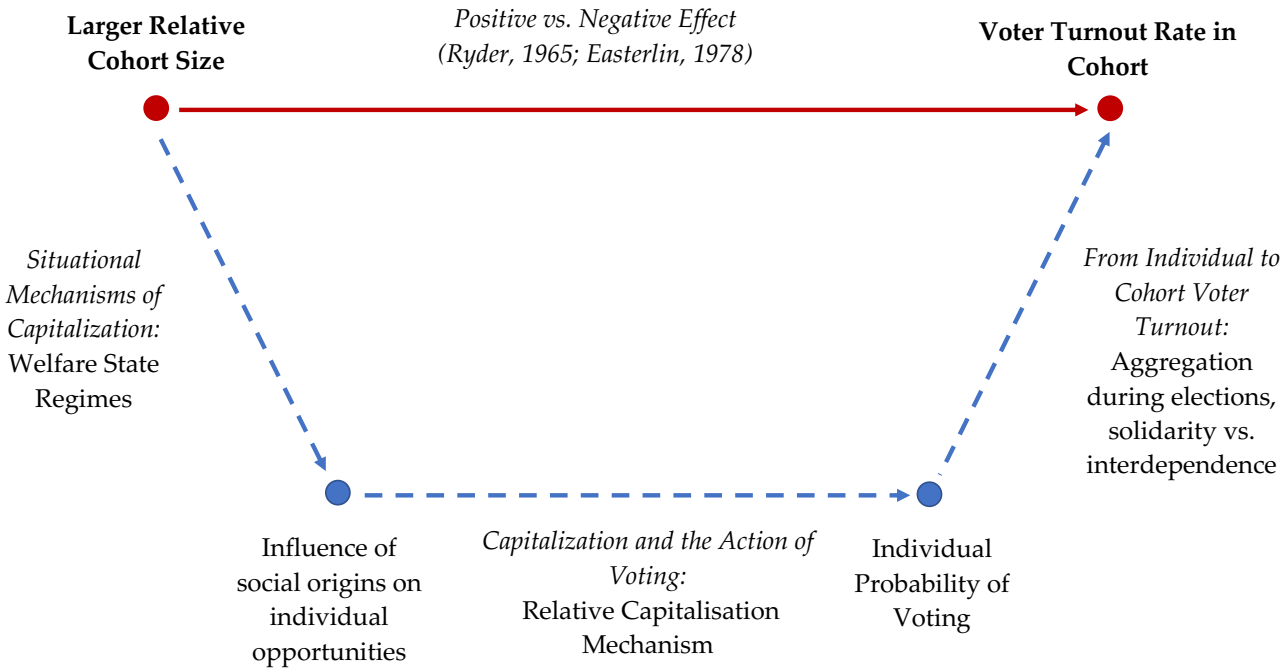


Figure 2 - Density Distribution of Relative Cohort Size

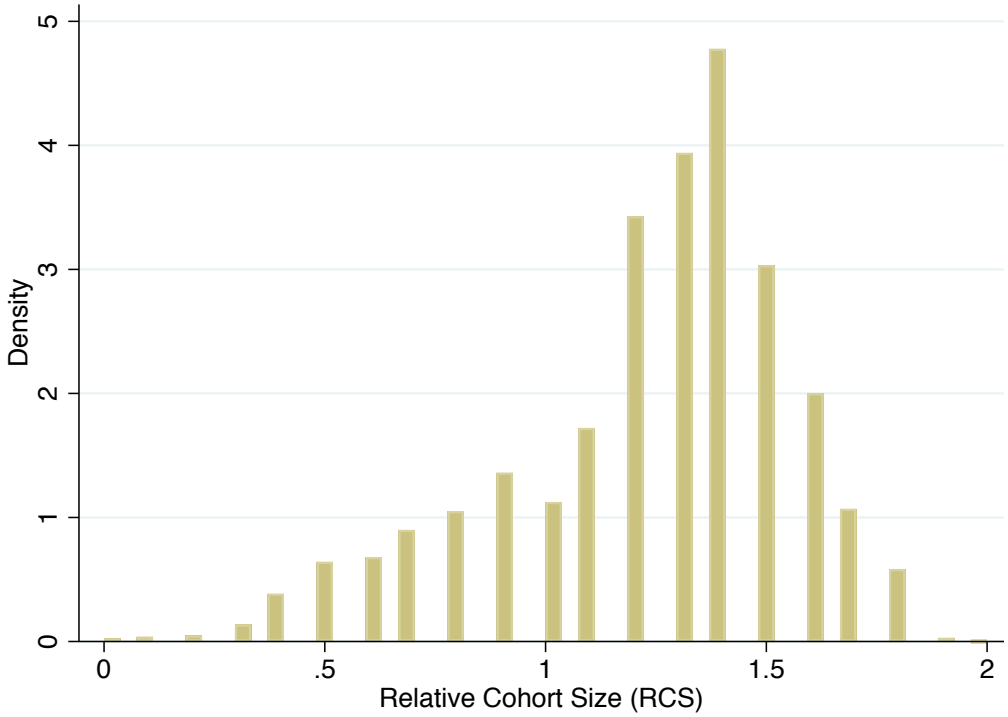
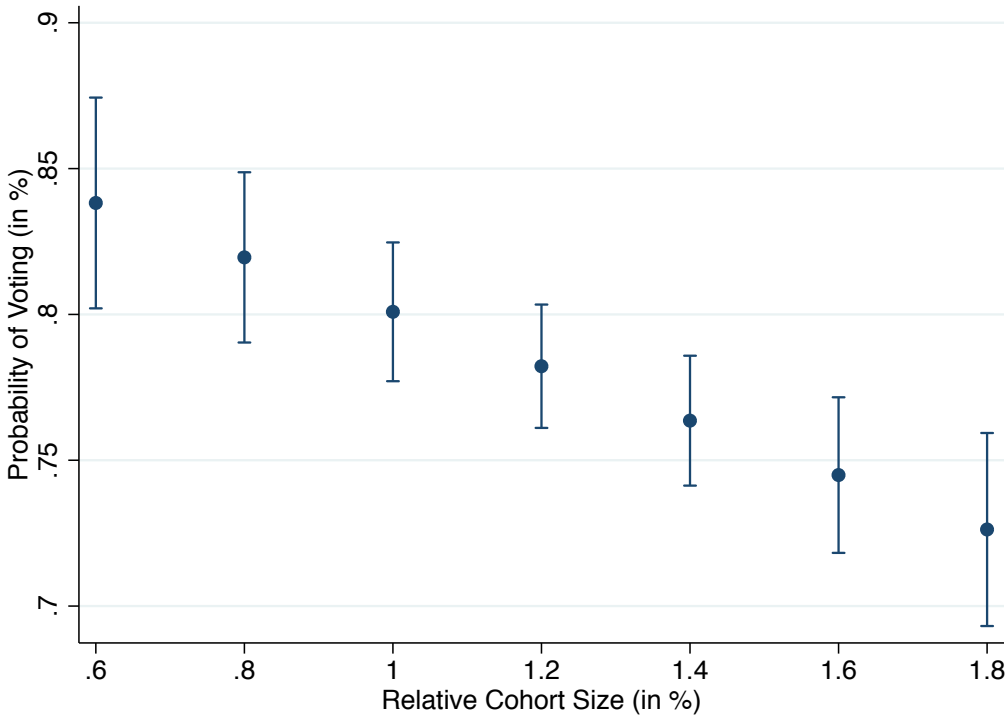
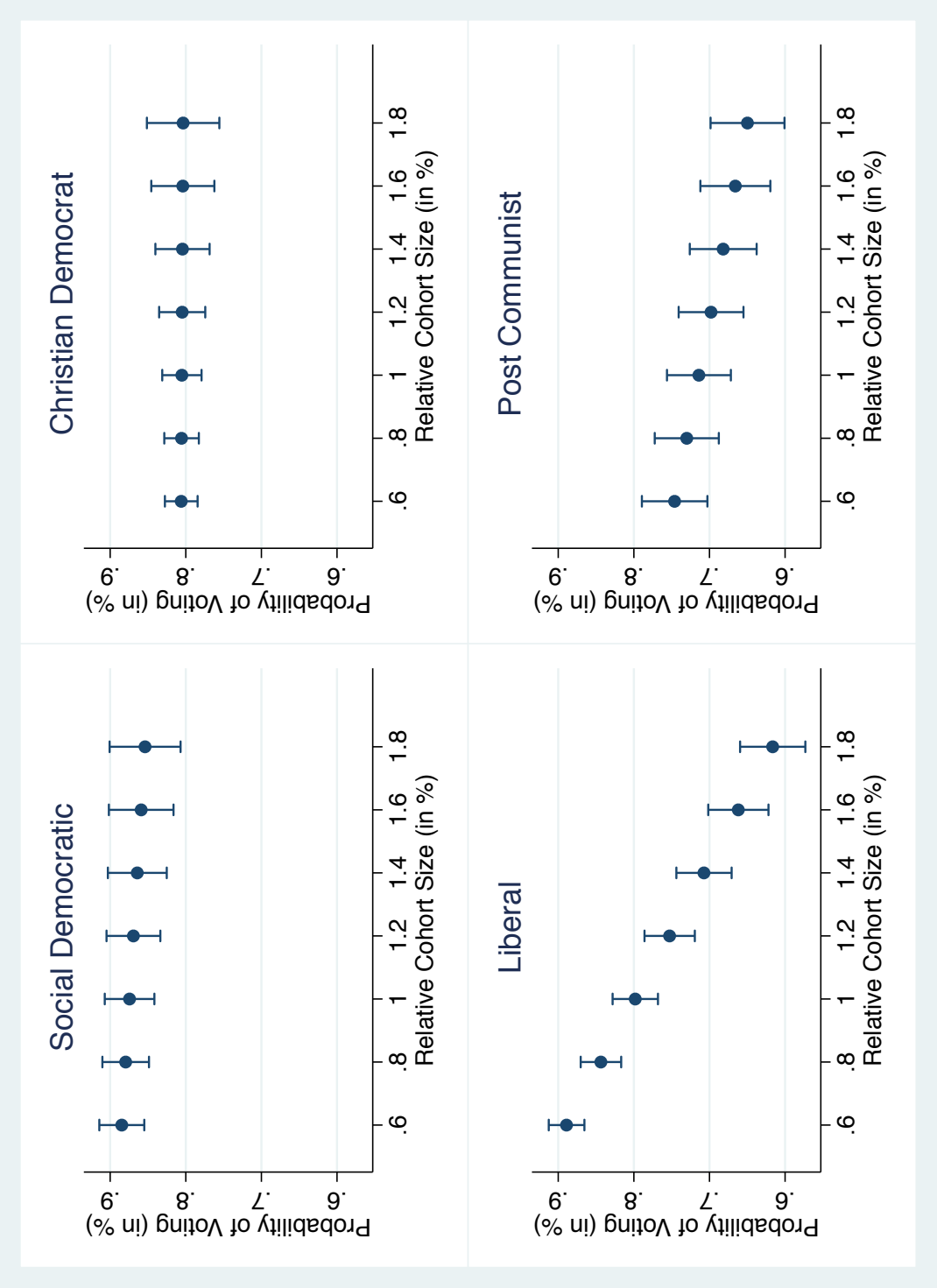


Figure 3 - Marginal Effects on the Probability of Voting, by Relative Cohort Size.



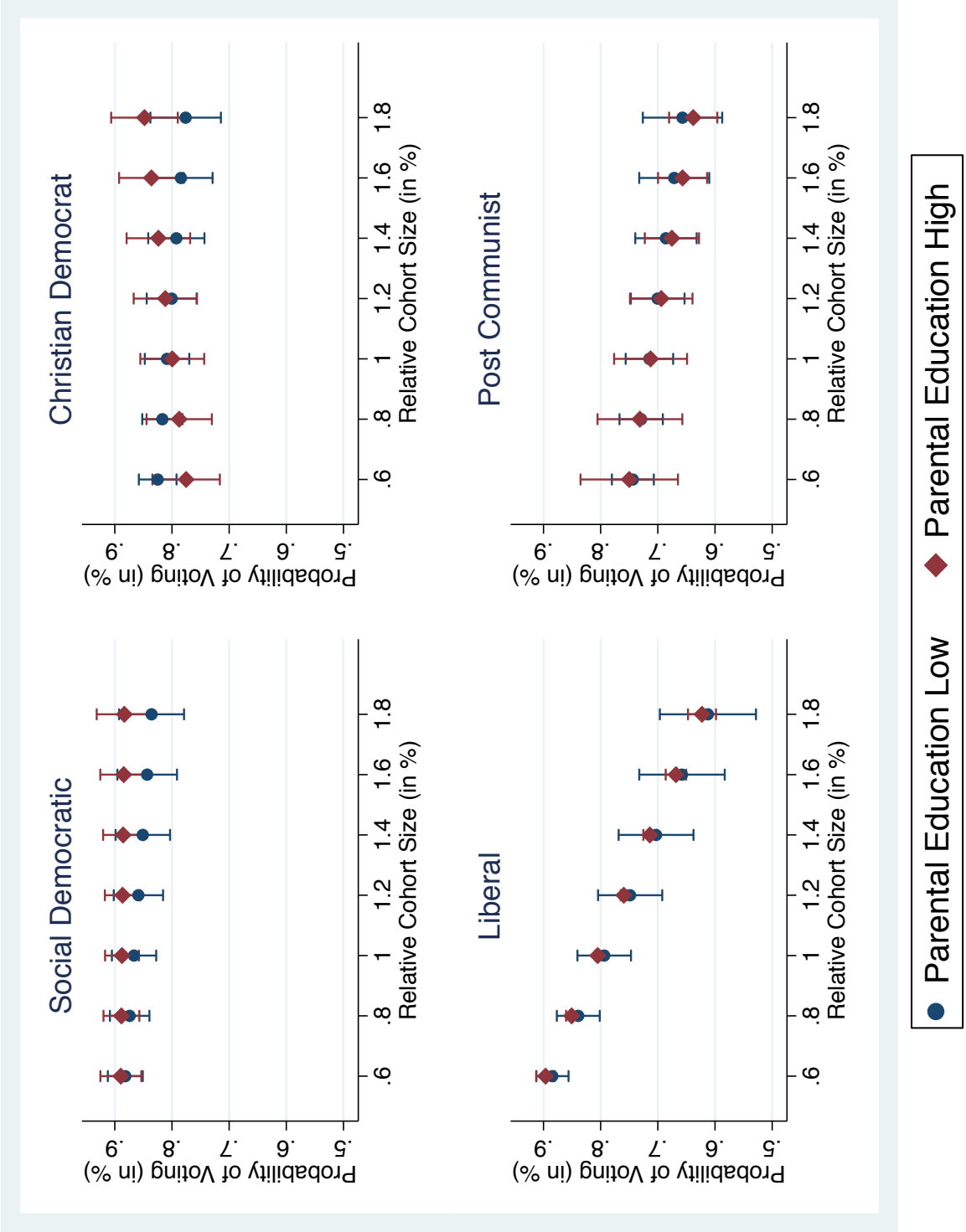
Average Marginal Effects with 95% Confidence Intervals, computed with cluster-robust standard errors. Data sources: European Social Survey and International Data Base of US Census Bureau, years 2002-2016.

Figure 4 - Marginal Effects on the Probability of Voting, by Relative Cohort Size and Welfare State Regime



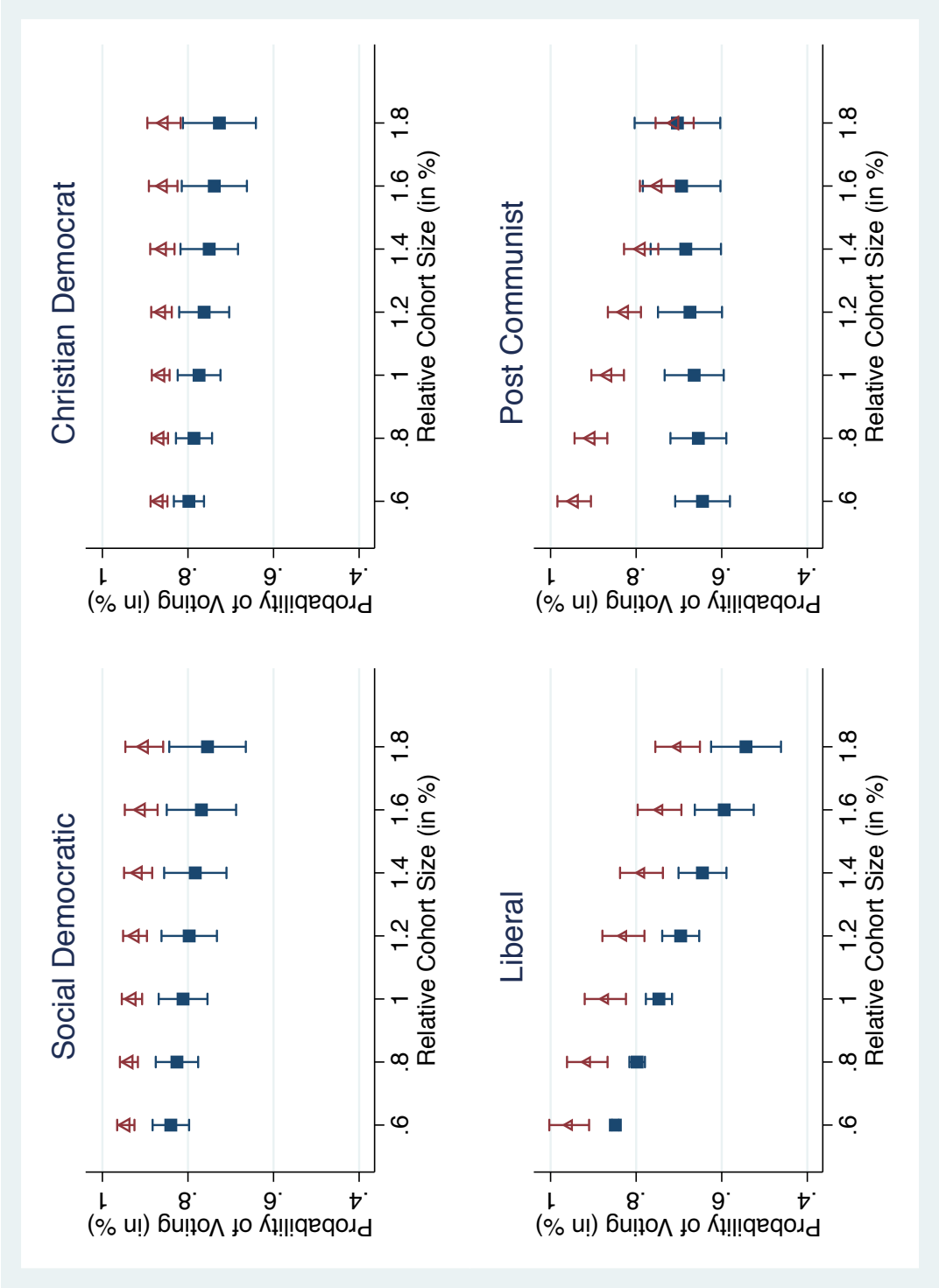
Average Marginal Effects with 95% Confidence Intervals, computed with cluster-robust standard errors. Data sources: European Social Survey and International Data Base of US Census Bureau, years 2002-2016. Countries in each Welfare Regime: Social Democratic (Denmark, Finland, the Netherlands, Norway, and Sweden); Christian Democrat (Austria, Cyprus, France, Germany, Greece, Italy, Spain, and Portugal); Liberal (Ireland and the United Kingdom); Post-Communist (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, and Slovenia).

Figure 5 - Marginal Effects on the Probability of Voting, by Relative Cohort Size, Welfare State Regime, and Parental Education



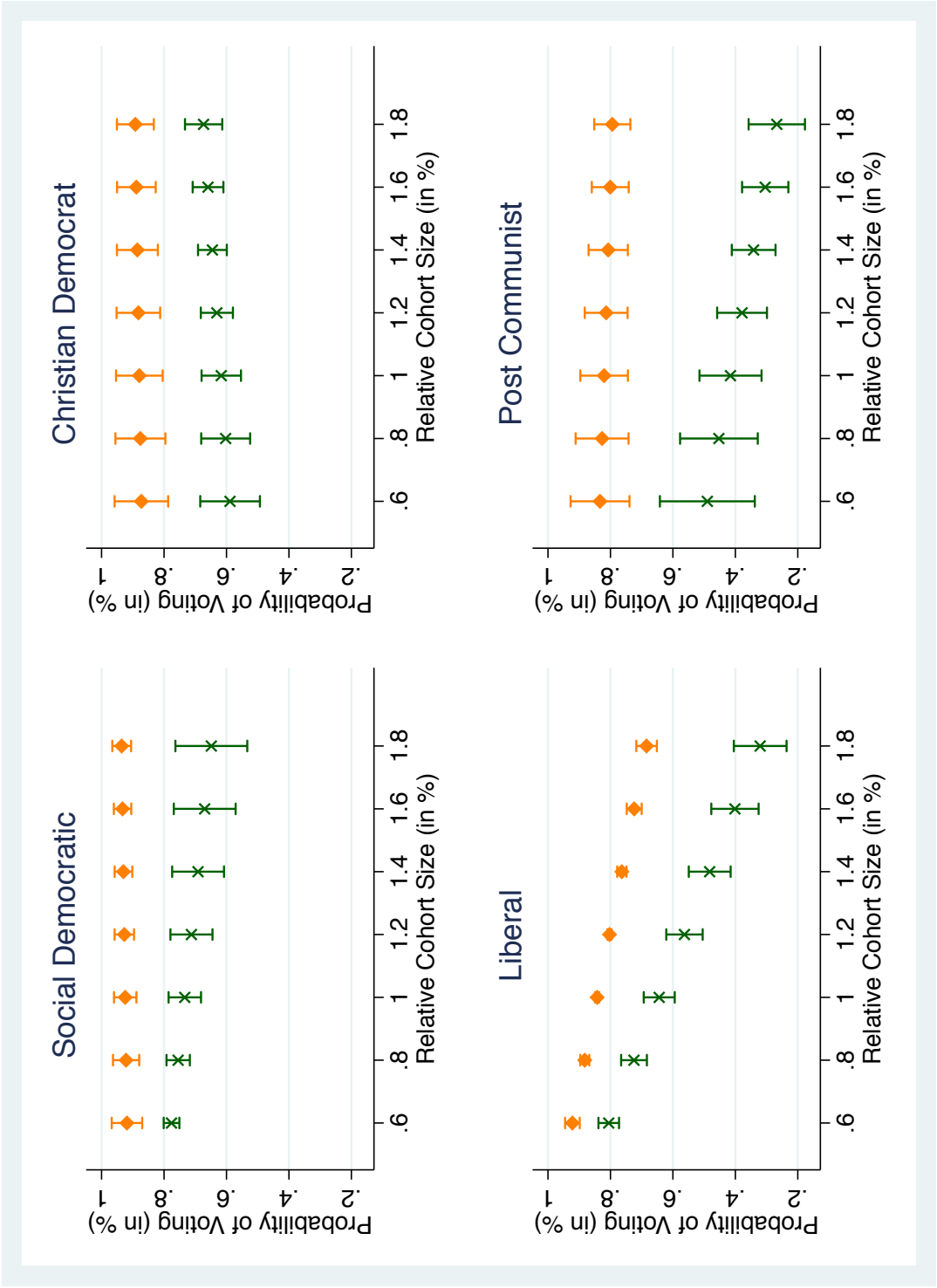
Legend: Red Diamonds – High Parental Education. Blue Circles - Low Parental Education. Average Marginal Effects with 95% Confidence Intervals, computed with cluster-robust standard errors. Data sources: European Social Survey and International Data Base of US Census Bureau, years 2002-2016. Countries in each Welfare Regime: Social Democratic (Denmark, Finland, the Netherlands, Norway, and Sweden); Christian Democrat (Austria, Cyprus, France, Germany, Greece, Italy, Spain, and Portugal); Liberal (Ireland and the United Kingdom); Post-Communist (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, and Slovenia).

Figure 6 - Marginal Effects on the Probability of Voting when **Parental Education** is **Low**, by Relative Cohort Size, Welfare State Regime, and Education Level of the Respondent



Legend: Red Arrows – Respondents with High Education and Low Parental Education. Blue Squares – Respondents with Low Education and Low Parental Education. Average Marginal Effects with 95% Confidence Intervals, computed with cluster-robust standard errors. Data sources: European Social Survey and International Data Base of US Census Bureau, years 2002-2016. Countries in each Welfare Regime: Social Democratic (Denmark, Finland, the Netherlands, Norway, and Sweden); Christian Democrat (Austria, Cyprus, France, Germany, Greece, Italy, Spain, and Portugal); Liberal (Ireland and the United Kingdom); Post-Communist (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, and Slovenia).

Figure 7 - Marginal Effects on the Probability of Voting when **Parental Education** is **High**, by Relative Cohort Size, Welfare State Regime, and Education Level of the Respondent



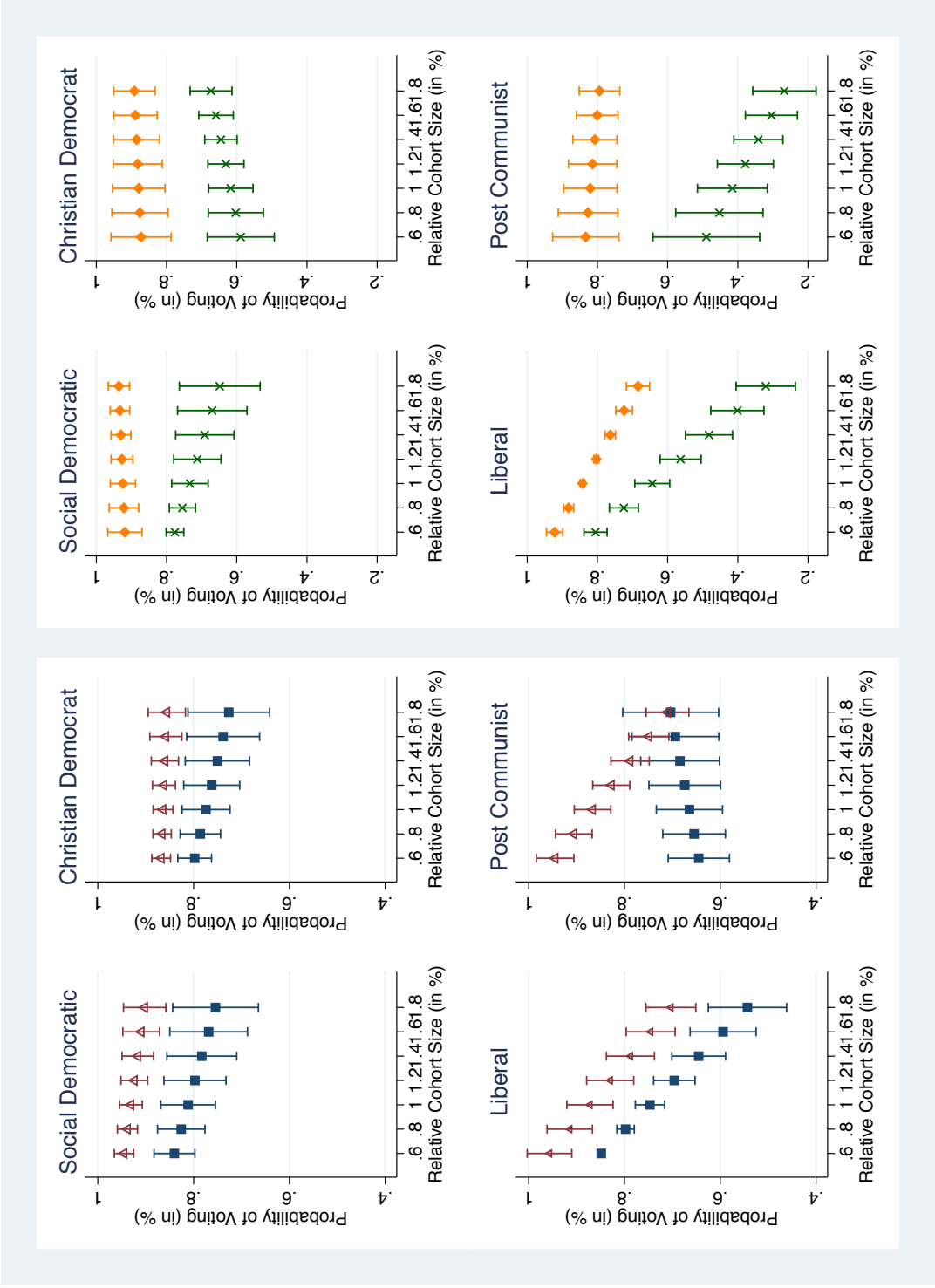
Legend: Orange Diamonds – Respondents with High Education and High Parental Education. Green Xs – Respondents with Low Education and High Parental Education. Average Marginal Effects with 95% Confidence Intervals, computed with cluster-robust standard errors. Data sources: European Social Survey and International Data Base of US Census Bureau, years 2002-2016. Countries in each Welfare Regime: Social Democratic (Denmark, Finland, the Netherlands, Norway, and Sweden); Christian Democrat (Austria, Cyprus, France, Germany, Greece, Italy, Spain, and Portugal); Liberal (Ireland and the United Kingdom); Post-Communist (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, and Slovenia).

Supplementary Materials

Table SM1 – Intergenerational Educational Mobility

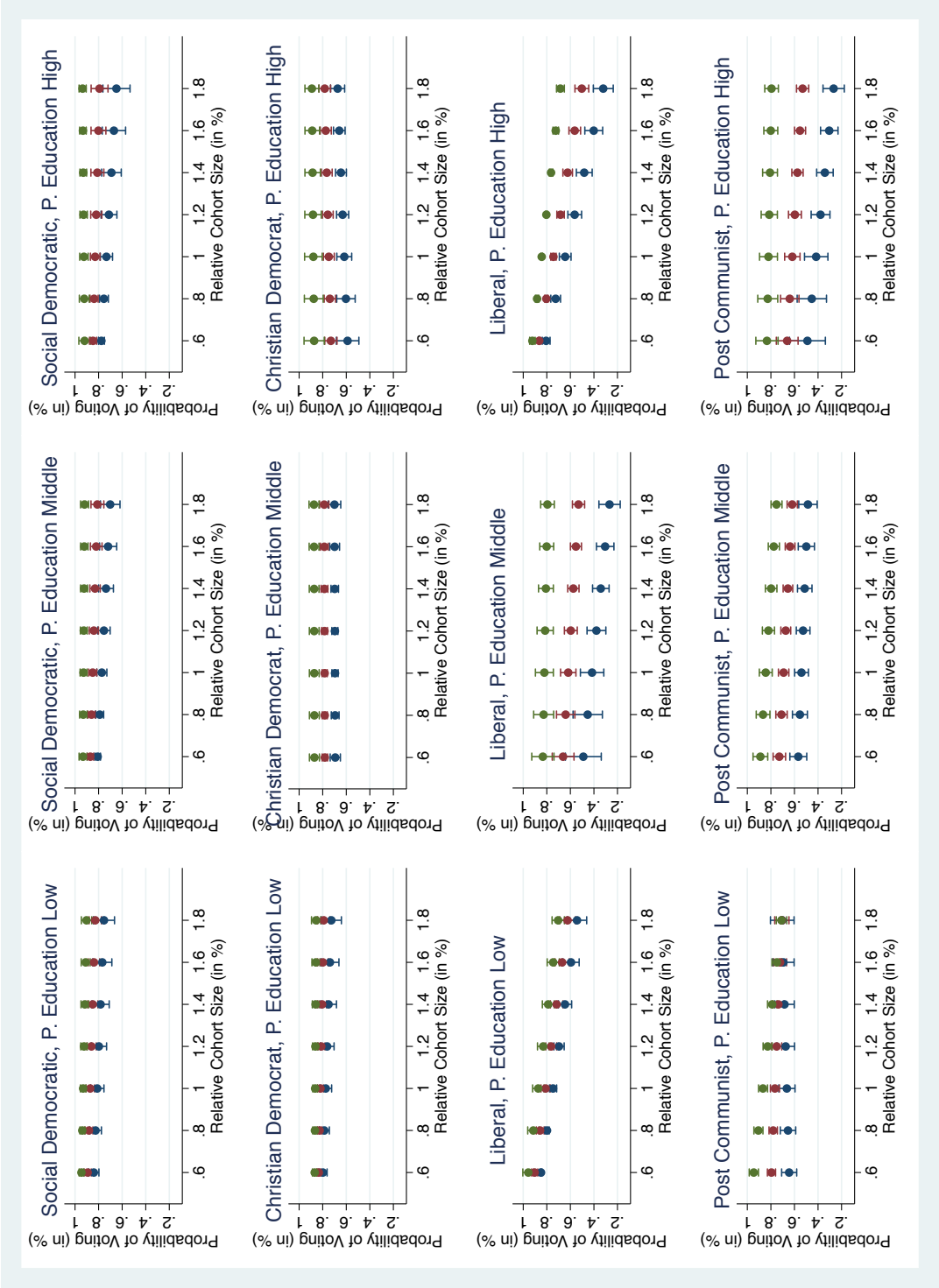
Level of Education	ES-ISCED I	ES-ISCED II	ES-ISCED III	ES-ISCED IV	ES-ISCED V	**Total**
Child ES-ISCED I	32,015	2,484	1,214	136	508	**36,357**
	10.99%	0.85%	0.42%	0.05%	0.17%	**12.48%**
Child ES-ISCED II	21,107	16,056	7,726	710	2,635	**48,234**
	7.25%	5.51%	2.65%	0.24%	0.90%	**16.56%**
Child ES-ISCED III	23,826	25,528	48,891	3,540	13,579	**115,364**
	8.18%	8.76%	16.79%	1.22%	4.66%	**39.61%**
Child ES-ISCED IV	2,880	2,350	4,886	1,961	2,310	**14,387**
	0.99%	0.81%	1.68%	0.67%	0.79%	**4.94%**
Child ES-ISCED V	12,246	10,842	22,688	3,729	27,427	**76,932**
	4.20%	3.72%	7.79%	1.28%	9.42%	**26.41%**
Total	92,074	57,260	85,405	10,076	46,459	**291,274**
	31.61%	19.66%	29.32%	3.46%	15.95%	**100.00%**

Figure SM2 - Marginal Effects on the Probability of Voting, by Relative Cohort Size, WSR, Respondent's Education, and Parental Education



Legend: Red Arrows – Respondents with High Education and Parental Education Low. Blue Squares – Respondents with Low Education and Parental Education Low. Orange Diamonds – Respondents with High Education and Parental Education High. Green Xs – Respondents with Low Education and Parental Education High. Average Marginal Effects with 95% Confidence Intervals, computed with cluster-robust standard errors. Data sources: European Social Survey and International Data Base of US Census Bureau, years 2002-2016. Countries in each Welfare Regime: Social Democratic (Denmark, Finland, the Netherlands, Norway, and Sweden); Christian Democrat (Austria, Cyprus, France, Germany, Greece, Italy, Spain, and Portugal); Liberal (Ireland and the United Kingdom); Post-Communist (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, and Slovenia).

Figure SM3 - Marginal Effects on the Probability of Voting, with Middle levels of education



Legend: Green Circles – High Education of the Respondent. Red Circles – Middle Education of the Respondent. Blue Circles – Low Education of the Respondent. Average Marginal Effects with 95% Confidence Intervals, computed with cluster-robust standard errors. Data sources: European Social Survey and International Data Base of US Census Bureau, years 2002-2016. Countries in each Welfare Regime: Social Democratic (Denmark, Finland, the Netherlands, Norway, and Sweden); Christian Democrat (Austria, Cyprus, France, Germany, Greece, Italy, Spain, and Portugal); Liberal (Ireland and the United Kingdom); Post-Communist (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, and Slovenia).