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IZA DP No. 14327

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Redistribution**

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ABSTRACT

Experiencing Booms and Busts in the Welfare State and Support for Redistribution*

We analyze how the exposure to adverse macroeconomic conditions during the “impressionable years” (i.e., between the age of 18 and 25), in interaction with welfare state institutions, forms political attitudes in adulthood. Based on a large panel dataset of European countries, we find that individuals who experienced high unemployment under a regime of low unemployment benefits are more in favor of redistribution later in life and state an orientation more oriented towards the left. However, negative economic shocks in an environment with a very generous unemployment insurance are related to less support of redistribution and a more rightist political attitude later on. The development of the welfare state thus seems crucial for how economic shocks affect the evolution of preferences and norms in society and thus finally feedback on institutional change.

JEL Classification: E60, J65, P16, P48, Z13

Keywords: macroeconomic experiences, impressionable years, support for redistribution, unemployment, unemployment insurance

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* We are grateful to various colleagues and participants of seminars and conferences for helpful comments on the project.

1 Introduction

Every generation forms its beliefs about the world anew. This involves important views about the exposure to economic risks like unemployment but also about the effectiveness of the private and the state safety net. The beliefs not only affect people’s individual labor market choices but also their attitudes towards collective action like redistribution. Forming their beliefs, people partly learn from the books (i.e., the accumulated knowledge in a society, often conveyed by close relatives); however, they also learn from own experience (e.g., Malmendier and Nagel, 2011). This latter channel is where our analysis sets in and aims at uncovering new evidence to a better understanding of endogenous aggregate-level change in welfare state attitudes in the long-run. In particular, we focus on the *joint* experience of economic shocks and the generosity of the welfare state in forming individuals’ support for redistribution and their political left-right orientation more generally.

Following theories from social psychology, we concentrate on experiences in young adulthood, precisely during the so-called *impressionable years* between the age of 18 and 25 (e.g., Krosnick and Alwin, 1989) that are particularly relevant for belief and preference formation.¹ Recent empirical evidence documents an effect of macroeconomic experiences during this period on preferences for redistribution in later life (e.g., Giuliano and Spilimbergo, 2014; Carreri and Teso, 2019; Roth and Wohlfart, 2018). Giuliano and Spilimbergo (2014), for example, show that individuals who experienced adverse macroeconomic conditions between the age of 18 and 25 hold stronger beliefs later on that success in life is determined by luck and not effort and are thus significantly more in favor of redistribution and leftist parties.²

Yet, people experience any economic shock jointly with the contemporaneous welfare regime. They are not only exposed to some macroeconomic conditions but also its interaction with a more or less generous social safety net. They thus learn about the welfare system, its effectivity in buffering shocks, and also about potential disincentive effects that might arise with a highly generous system. These considerations lead to three related hypotheses. First, in a

¹In the remainder of this paper, we will use the terms “impressionable years” and “formative years” interchangeably.

²The authors estimate that experiencing a macroeconomic shock during the impressionable years could explain up to 15% of the probability of voting for a Democratic presidential candidate in some U.S. states.

context with little protection from social insurance, here low unemployment benefits, the exposure to macroeconomic shocks during early adulthood makes economic risks more salient and strengthens support for redistribution. Second, with increasing benefit generosity, the welfare consequences of a shock are buffered, moderating its effect on the support of redistribution. Third, with high benefits, a negative shock lets people also learn about the limits of a generous welfare state arrangement, weakening their preference for government redistribution.

We test these hypotheses in a cross-country setting taking the generosity of welfare state benefits in terms of the unemployment replacement rate jointly into account with the exposure to low or high unemployment during the formative years. As far as we are aware, our analysis is the first which empirically considers the effects of their interaction on political attitudes. We draw on data from the European Social Survey (ESS) for thirteen countries and up to nine survey waves between 2002 and 2018. In our empirical strategy, to assess the long-term consequences, we estimate a panel of repeated cross-sectional data controlling for country-specific life-cycle effects, country-specific non-parametric time trends and an array of individual covariates, and identify the effects based on between-cohort differences within country-survey years. By holding individual covariates constant, we also control for potential “hard” outcomes of experiencing hardship at the time of labor market entrance (see, e.g., Oreopoulos, von Wachter and Heisz, 2012; Schwandt and von Wachter, 2019). Hence, we exploit variation in the circumstances of individuals born in different years within one country, while controlling for the fact that political attitudes might change with socio-demographic characteristics and as people age.

In our empirical analyses, we find systematic variation in the relationship between the exposure to macroeconomic booms and busts and people’s political attitudes later on. In a context with no unemployment insurance, our estimation shows higher unemployment during the impressionable years to be strongly positively related to support for redistribution later on. This is consistent with our hypothesis and the results presented in Giuliano and Spilimbergo (2014), considering that their results are mainly based on a U.S. sample³, where people experienced

³In a sub-analysis, Giuliano and Spilimbergo (2014) repeat their analysis with the international World Value Survey as their main data source. Yet, their identification of macroeconomic shocks rests upon the definition by Barro and Ursua (2008), where a “GDP disaster” is defined as a peak-to-trough decline in GDP that exceeds 10%. For the exception of the Finnish Great Recession between 1989-1993, this definition identifies mainly pre- or during war (i.e, before 1945) recessions in Europe. Hence, this analysis does not provide us with insights on the joint experience of macroeconomic shocks and potentially moderating institutions. This is mainly because the

macroeconomic shocks under institutions of low generosity of social benefits and a strong norm of self-reliance (e.g., Alesina and Angeletos, 2005). Yet, for other contexts of more generous social insurance in our European sample, the estimations indicate that the exposure to high unemployment does either not have a long-term impact on political attitudes or a reversed one. The latter is the case in interaction with a high benefit replacement rate, the exposure to high unemployment then leads to lower support of redistribution and more of a rightist political orientation later in life. Our evidence further suggests that the long-term consequences are particularly pronounced for individuals from lower socio-economic backgrounds (proxied by the father's level of education), hence those individuals for whom private insurance does not represent an obvious alternative to social insurance. Moreover, the results are robust to including cohort fixed effects, or country-specific generation fixed effects⁴, as well as to a non-linear specification of the relationship with experienced unemployment and we show that they are not driven by trust in the government.

Our work combines and contributes to at least three strands of literature: First, we add to the literature on the determinants and motives of preferences for redistribution (for a review, see, for example, Alesina and Giuliano, 2011). Second, our work connects to the growing number of empirical studies on preference formation in adolescence and early adulthood (e.g., Giuliano and Spilimbergo, 2014; Carreri and Teso, 2019; Roth and Wohlfart, 2018; Aksoy, Eichgreen and Saka, 2020; Cotofan et al., 2021). And third, exploring potential moderation effects of social security, our work also relates to the literature on the co-evolution of formal and informal institutions and endogenous preferences, respectively welfare state dynamics (e.g., Alesina and Giuliano, 2015; Bowles, 1998; Bowles and Gintis, 2000; Lindbeck, 1995*a*; Lindbeck, Nyberg and Weibull, 2003; Ljunger, 2012).

The paper proceeds as follows: In Section 2, we summarize theory and existing evidence on the formation of preferences for redistribution and develop our hypotheses concerning the in-

majority of European countries had not implemented a national social security system before, but also because war experiences were shown to have enduring effects; not only on economic and health outcomes (e.g., Kesternich et al., 2014), but also on attitudinal outcomes such as egalitarian motives (Bauer et al., 2014).

⁴The terms *cohort* and *generation* are often used interchangeably. We refer to cohort as those people born in the same year (e.g., 1955); generations denote a group of individuals born within a certain time range (e.g., 1953-1968), i.e., more than one year of birth.

teraction of macroeconomic conditions and welfare regimes in attitude formation. Section 3 describes the data and sets out our empirical strategy. In Section 4, we present and discuss the results of our analyses and provide robustness checks. Section 5 concludes.

2 Theoretical Foundations and Related Evidence

Our theoretical argument emphasizes the systematic interaction of economic experiences and welfare state institutions in the formation of beliefs and the support of redistribution. It combines and expands the economic theories on the demand for redistribution with considerations on learning from experience. The focus here is on the fact that people experience economic shocks in a particular institutional context. They thus learn about the consequences of economic shocks as well as the functioning of institutions jointly. This learning is argued to occur during the formative years of an individual. In the following Sections 2.1 to 2.4, we present the related theoretical foundations in more detail and mention related evidence. Based on them, we derive empirically testable hypotheses in Section 2.5.

2.1 Beliefs and the demand for redistribution

In their seminal ‘rational theory of the size of the government’, Meltzer and Richard (1981) model the demand for redistribution as a purely consumption oriented instrumental choice of a perfectly informed median voter. He or she takes into account that a higher proportional income tax to finance the lump-sum transfers affects the labor supply of people. Beyond that, the median voter has not to form any beliefs when maximizing his or her utility. The same assumption about subjects’ information holds for subsequent theories like the one in Sinn (1995) that emphasizes the risk-insurance motive of redistributive politics and thus the inter-temporal nature of the maximization problem. The inter-temporal attribute underlying the optimal redistribution level for an individual is further stressed, for example, by Piketty (1995) or in the *prospect of upward mobility* (POUM) hypothesis by Bénabou and Ok (2001). In the POUM model, rational agents have perfect knowledge of the (stochastic) mobility process. This latter aspect is different in Piketty (1995). Beliefs about upward mobility are endogenous. The belief dynamics follow different income trajectories that are caused by shocks. Accordingly,

individuals hold differential beliefs on whether success in life is determined by luck or effort (and are subsequently encouraged or discouraged to provide work effort). In line with this theory, Fong (2001) shows, based on survey data, that *beliefs* about the causes of economic success affect the demand for redistribution, i.e., those who believe that luck is important are more likely to support higher levels of redistribution.

2.2 Experiences and the formation of preferences for redistribution

In contrast to the assumptions in standard economic models that individuals incorporate all historical data available when forming beliefs about mobility processes (or the determinants of the distribution of income) and update them in a Bayesian manner, research in psychology and behavioral economics emphasizes an overweighting of personal experiences (e.g., Camerer and Ho, 1999; Hertwig et al., 2004; Simonsohn et al., 2008; Choi et al., 2009). Personal biographies in terms of experiences of the *market* environment as well as of the *institutional* environment more broadly were shown to influence individuals' beliefs and preferences. Fehr and Hoff (2011) summarize this latter influence of *institutions* on preferences with the notion that they do not only restrict choices but also “act as elicitation, framing and anchoring devices for preferences and beliefs” (p. F397). Alesina and Fuchs-Schündeln (2007), for example, demonstrate that having lived under the East German Communistic system significantly and robustly affects preferences and attitudes concerning the role of government in society long after the 1990 reunification in Germany. Fuchs-Schündeln and Schündeln (2015) similarly exploit within-country variation in the length of time that individuals have experienced democracy and find that preferences for democracy increase with the length of living under democratic rules. Friehe and Pannenberg (2020) show that time preferences of former residents of the German Democratic Republic (GDR) exhibit a significantly less pronounced present bias when compared with former residents of the Federal Republic of Germany (FRG). The influence of *market* conditions on attitudes, preferences and beliefs was tested by Malmendier and Nagel (2011), showing that individuals who experience low stock market returns later on express significantly lower willingness to take financial risks. Gräber and Zimmermann (2019) find persistent and robust negative long-term effects of economic crises experiences on trust, whereas Massenot and Nghiem (2019)

show that the experience of higher unemployment rates over the lifetime makes people more worried about losing their jobs. Malmendier and Sheng Shen (2018) show that households who experienced higher unemployment rates or personal unemployment throughout their lives consume significantly less in the long-run.

2.3 Experiences during the impressionable years

Not all experiences matter the same. Economic and political beliefs are rather most strongly formed and shaped during early adulthood. Research in social psychology and political sociology refers to this formative period as *impressionable years* (Krosnick and Alwin, 1989).⁵ An immediate sensitivity of young individuals to macroeconomic conditions in the short-run has, for example, been shown by Reeskens and Vandecasteele (2017) in terms of social and political trust and subjective well-being. Recent evidence for the long-run, concurs with the impressionable years hypothesis and suggests that economic experiences during the period between the age of 18 and 25 shape preferences, in particular preferences for redistribution. Giuliano and Spilimbergo (2014) show that individuals who experienced a recession or high unemployment when young believe that success in life depends more on luck than on effort and consequently support more government redistribution. Congruent with the risk motive, Shigeoka (2019) shows that severe macroeconomic conditions in youth are associated with higher risk aversion in adulthood. Using panel data for Switzerland, O’Grady (2019) presents evidence that preferences for redistribution have at most a weak relationship with current material interest, but rather emerge as a result of economic (and ideological) socialization. Taken together, this evidence suggests that severe macroeconomic conditions during the formative period make risk exposure more salient

⁵Karl Mannheim already stated in his seminal work “Das Problem der Generationen” from 1928 that differential experiences in the critical period of later childhood and early adulthood lead to differential beliefs and attitudes across generations within societies (Mannheim, 1964). Closely related to the *impressionable years hypothesis* is the *increasing persistence hypothesis*, stating that individuals are particularly impressionable by social environments when they are young, but then become progressively less influenced by experiences around them (e.g., Glenn, 1974). This sensitivity of young adults can be explained psychologically by openness for change or biologically by a greater mental plasticity of the brain. In addition, adolescence and early adulthood comprise major life changes, such as, for example, the transition from education to the labor market, which are said to be substantial enough to revise preferences (for a comprehensive summary of personality development at a young age, see the review by McAdams and Olson 2010).

for individuals and hence increase their demand for protection against shocks.⁶ Furthermore, recent evidence by Ajzenman, Nicolas and Martin Fiszbein (2020) suggests that also the imprint by the institutional environment is particularly strong during the impressionable years. In their work, the exposure to democratic institutions between the age of 18 and 25 shapes civic attitudes more strongly than experiences in any other period. Despite the conceptual connection between the long-lasting impressions of economic and political conditions, research, so far, has not considered the concomitant institutional environment that individuals experience when analyzing the effects of macroeconomic conditions during the impressionable years.

2.4 Learning from the functioning of the welfare state

Welfare systems evolve over time in the political process and have to strike a balance between the effective prevention of poverty and adverse incentive effects. Thereby, demand for redistribution is expected to go up when risks in the labor market rise, for example, through an unemployment shock. Re-election oriented politicians respond and supply welfare measures that reduce the personal risk associated with subsequent shocks but which also weaken work incentives. In this environment, people learn and form beliefs based on the joint experience of macroeconomic and institutional conditions. Institutions thus influence individual preferences directly (as stated, e.g., by Bowles, 1998; Fehr and Hoff, 2011; or Slotwinski and Stutzer, 2018) and indirectly.⁷ Specifically, they shape the perception of macroeconomic conditions and affect the dynamics of learning about others' behaviors:

First, the joint experience provides individuals with information about the effectiveness of social security systems in alleviating shocks. They learn how insurance helps those individuals directly affected by a shock, but also those, for example, who remain employed and face the insecurity associated with a high unemployment labor market situation (Lüchinger, Meier and Stutzer,

⁶Apart from influences on attitudes, preferences and beliefs, empirical research also provides evidence for long-lasting “hard outcome” effects: Oreopoulos, von Wachter and Heisz (2012), for example, show that entering the labor market in a recession leads to persistent earnings and wage reductions in Canada. Similar results were also found in the U.S by Schwandt and von Wachter (2019) (who also offer a current review of the literature on labor market outcomes of experiencing a recession in early adulthood).

⁷For example, Galbiati, Henry and Jacquemet (2017) show that past institutional environments can affect behavior (in their case cooperation) both through direct and indirect spillover effects. They demonstrate that institutions affect the dynamics of learning about others as they alter behavior in the past and by a snowball effect then also modify behavior in the present.

2010).⁸ Moreover, if unemployment shocks are buffered by a generous unemployment insurance, individuals might *perceive* the consequences as less severe. The corresponding experiences are then feeding the demand for social security less.⁹

Second, the experience of macroeconomic shocks also provides people with information about whether the system sets the right incentives for a well-functioning welfare state. In the short run, disincentive effects of unemployment insurance are mostly assessed in terms of elasticities of unemployment duration to benefits (see, e.g., Card and Levine, 2000; Gangl, 2004; or Lalive, 2007). This relationship is moderated by social work norms. Strong norms constrain the influence of economic disincentives on job search as applying for benefits is stigmatized, involves social sanctions and leads to a loss of reputation. However, social work norms are themselves endogenous. With generous benefits relative to after-tax wages, people are less willing to comply with a social norm to work. This might hold in particular after a macroeconomic shock when the number of benefit recipients rises. The disutility from a norm deviation is reduced and the tolerance in the population for living off benefits in subsequent periods is increased.¹⁰ Whether and how such developments translate into support for redistribution is yet *ex ante* not clear. According to the ‘hazardous welfare state dynamics’ model by Lindbeck, Nyberg and Weibull (1999), the erosion of social work norms endogenously creates an increase in egalitarian demands, suggesting a (delayed) increase in demand for redistribution with rising levels of welfare generosity. This mechanism is amplified with higher unemployment as individuals become less reluctant to live off benefits. Bowles and Gintis (2000), reversely, state that egalitarian policies offered to people unconditional of their contribution to society (which is often associ-

⁸Wulfgramm (2014) or Voßmer et al. (2018), for example, show that the generosity of passive labor market policy substantially moderates the negative well-being effects of unemployment. Moreover, Sjöberg (2010) finds that the generosity of unemployment benefits also impacts the subjective well-being of employed individuals, especially those who face higher insecurity in the labor market.

⁹Related research, for example, by Cruces, Perez-Truglia and Tetaz (2013) shows that *perceived* income distributions explain preferences for redistribution far better than actual income distributions.

¹⁰In theoretical work, this interaction has been modeled as a world with two equilibria: one with strong norm compliance, high individual costs of unemployment and a low rate of unemployment overall, and one with an eroded norm, low individual costs but a high rate of unemployment (Lindbeck, 1995*a*; Lindbeck, 1995*b*; Lindbeck, Nyberg and Weibull, 1999; Lindbeck, Nyberg and Weibull, 2003). Heinemann (2008) empirically tests potentially self-destructive dynamics of the welfare state and finds that long-run increases in welfare state spending (in percent of GDP) and long-run changes in the unemployment rate relate to a lower benefit morale, respectively lower social work norms. Including country-fixed effects, Halla, Lackner and Schneider (2010) and Corneo (2012) yet find that an increase in social spending has no statistically significant effect on the probability that individuals display weaker work ethics.

ated with a very generous welfare regime and a low benefit morale) are considered unfair and thus receive less support. As in Galbiati, Henry and Jacquemet (2017), people’s past responses to institutions, which in the current context would be the inappropriate use of unemployment insurance, lower individuals’ support for redistribution today.

2.5 Hypotheses

Based on these considerations, we formulate the following three related hypotheses for our empirical analysis of the joint effects of economic hardship and benefit generosity during the impressionable years.

Hypothesis 1: In a context with low (unemployment) benefits, the experience of macroeconomic hardship during the impressionable years strengthens support for redistribution as the salience of risks is increased.

Hypothesis 2: With higher benefit generosity, the welfare consequences of a shock are perceived as less severe, weakening any positive effect on the support of redistribution.

Hypothesis 3: With high benefits, the experience of a shock lets people also learn about the hazardous aspects of the welfare state (such as increasing moral hazard and lower benefit morale) weakening their preference for redistribution.

Transferred to political ideology, people’s position on the left-right spectrum is expected to be affected accordingly.

While empirical studies that address these hypotheses are scarce so far, some have investigated the interaction between macroeconomic experiences and the institutional context. Cordes and Dierkes (2017), for example, show that the decreasing willingness to take financial risks when so far having experienced lower life-time stock market returns, found by Malmendier and Nagel (2011) in the U.S., translates to individuals born in the FRG, but not to those born and raised under the communistic regime in the GDR. The study closest to ours, by Neundorf and Soroka (2018), investigates in a cohort analysis whether the expansion of the welfare state in Great Britain moderates the effects of macroeconomic conditions during the formative years on preferences for redistribution. They hypothesize that demand for redistribution can only be increased by macroeconomic hardship if there is a welfare state that people can turn to,

i.e., if they know that there are institutions in place that could potentially protect them from the shock. Using a binary indicator for welfare state experiences (i.e., before and after 1945), they find that cohorts socialized before the expansion become less supportive, while cohorts socialized under a more expansive welfare state become more supportive of redistribution, when experiencing recessions. Our study differs primarily in two ways: Neundorf and Soroka (2018) study the transition from no welfare state to the existence of some welfare state. We analyze the relationship in a cross-country setting with variation in the generosity of welfare benefits over time. This, first, allows us to rule out confounding factors that are related to generation effects. Such a statistical control is particularly important in this kind of analysis, given that long-lasting effects of war experiences are emphasized in the literature (e.g., Kesternich et al., 2014). Second, our setting allows us to test whether the experience of different levels of welfare generosity have differential effects on individual support for redistribution.

3 Data and Empirical Strategy

To measure individuals' support of redistribution, we mainly use their self-reports from the European Social Survey (ESS). Section 3.1 introduces them and the other dependent variables in detail. The ESS is a repeated cross-sectional survey containing information on individuals' demographics, attitudes and beliefs in a large sample of European countries. Since the first wave in 2002, the surveys are repeated biannually. We use all nine waves available so far, i.e., 2002 to 2018. The individual-level ESS data is combined with a compiled dataset of macroeconomic conditions and of indicators for the institutional environment based on country and cohort identification from the AMECO Database (European Commission, 2019) and the OECD (OECD, 2007; OECD, 2020). Section 3.2. describes the corresponding construction of the variables capturing the conditions during the impressionable years. Section 3.3 explains the sample selection and Section 3.4 the empirical strategy.

3.1 Dependent variables

Stated support for redistribution — Our key outcome variables is a measure capturing whether people are in favor of redistribution using stances on the statement *“The government*

should take measures to reduce differences in income levels”, reported on a scale from (1) *Disagree Strongly*’ to (5) *Agree Strongly*’.¹¹ Though this question has been used extensively to study preferences for redistribution, as, for example, in Luttmer and Singhal (2011), Alesina and Giuliano (2011) or Roth and Wohlfart (2018), it comes with two potential drawbacks. First, modern welfare states generally have two main objectives: to redistribute from the richer to the poorer population and to insure against various risks. While these objectives are theoretically distinguishable, an empirical differentiation is not possible based on this single survey measure. Referring to Alesina, Murard and Rapoport (2019), we argue that the problem is empirically less severe as attitudes for both aspects are expected to be highly correlated. Second, it is unclear whether this question is interpreted by respondents in an absolute or marginal manner, i.e., in relation to the current level of redistribution.¹² As our identification strategy involves country-survey-year fixed effects, this should, however, not constitute an issue for our estimations. We expect any variation to be related to language or culture, i.e., to vary between countries but not with our identifying variation in early adulthood experiences. We only assume that people from the same country in any given year interpret the question the same. To validate our main measure, we report correlations with more specific questions from the two special ESS modules on welfare attitudes in the rounds 2008 and 2016. Similarly to Alesina, Murard and Rapoport (2019), we find rather weak correlations between our main measure and the special welfare state question. However, the correlations are statistically significant and robust across countries (see Table A1 in the Appendix).

Left-right orientation and party choice — We additionally use a question on individuals’ self-placement on the political left-right spectrum, a measure that was shown to be closely related with preferences for redistribution (e.g., Roth and Wohlfart, 2018). To test whether people’s stated positioning on the left-right scale also translate into actual voting behavior, we last test our results using the country-specific question asking respondents *“Which party did you*

¹¹We recoded the dependent variable such that higher values mean stronger support of redistribution.

¹²Figure A.1 in the Appendix indicates a slight negative correlation with current levels of redistribution. Respondents from Denmark, a country with a relatively generous welfare system, for example, report preferences for redistribution significantly below the European average in our sample. The correlation is yet not very systematic: respondents from other Nordic countries, such as Sweden or Finland, for example, report preferences for redistribution close to, or even above, the European mean.

vote for in the last national election?”. When participants reported their voting behavior (this is the case in 57% of the sample), we assigned left-right ideology values to the parties according to the classification by Huber and Inglehart (1995) (also applied by Giuliano and Spilimbergo 2014 and Roth and Wohlfart 2018).¹³

3.2 Conditions during the impressionable years

Construction of the main variables — For the main empirical analysis, we construct one variable measuring the macroeconomic condition and one reflecting the institutional environment during the formative years of an individual. Following the existing research in political sociology, social psychology, and more recently also in economics (e.g., Giuliano and Spilimbergo, 2014; Roth and Wohlfart, 2018), we set the relevant age range to 18 to 25.¹⁴ The primary indicator of economic hardship is the average national rate of unemployment (UR) during these years of a person’s life. The indicator is thus calculated for each birth cohort in each country. Unemployment denotes a substantial risk to household income and generates a particularly emotional experience. Moreover, it is a continuous measure for the macroeconomic conditions experienced during the formative years.¹⁵ As a complementary indicator, we consider the aver-

¹³Adopting this classification has the drawback that even the first wave of the ESS was conducted nine years after the field work in Huber and Inglehart (1995). Thus, many of the parties listed in the ESS were not (yet) classified in the register. Further, the position of parties might have changed over time, though we are confident to assume that, within countries, their relative position remained rather stable: Huber and Inglehart (1995) compare their own results with the positions of parties reported by Castles and Mair (1984) and find a very high correlation of 0.94 between their data and the one from ten years before. Last, some parties have changed names over time (e.g., the Parti Social Chrétien (PSC) in Belgium changed their name to Centre Démocrate Humaniste (CDH) in 2002) or consolidated with other parties. Where possible, we considered this and adopted the values in case of renaming or used the mean value of both former parties in case of mergers. Last, we reversed the Huber and Inglehart (1995) scale in accordance with our other measures such that higher values indicate a stronger left-wing orientation.

¹⁴We also consider age ranges surrounding the formative years (i.e., ages 10-17; 26-33; and 34-41). The corresponding results for these categories are provided in Appendix B.5.

¹⁵In their main analysis, Giuliano and Spilimbergo (2014) measure the experience of macroeconomic shocks by constructing a binary variable indicating whether the individual experienced at least one year in which real regional per capita GDP growth was lower than the lowest 10th percentile of the GDP growth distribution. Though this strategy could be translated to changes in the unemployment rate, we argue that there are several issues with defining macroeconomic shocks on relative change over a specific time frame: First, the measure is sensitive to the time frame over which the 10th percentile is defined. The lowest 10th percentile of the GDP growth distribution in our data is, for example, very sensitive to including or excluding the years of the financial crisis in 2009/10. In the time frame from 1961 to 2005, the lowest 10th percentile threshold for our sample would be 0.05 %, whereas it would be -0.37 % when we additionally consider the years 2006 to 2017. Second, considering the importance of personal experience, the relevance of this time frame is also disputable, as a crisis to someone who had his or her impressionable years in the 1960s is defined partly over prospective data from

age growth of GDP per capita during these same years.¹⁶ For both macroeconomic indicators, unemployment and GDP growth, we retrieve data from the AMECO Database from the European Commission.

The variable approximating the social security net is the average replacement rate of a country's unemployment insurance during a person's impressionable years (UI). As our main data source, we employ the historic OECD summary measure of benefit entitlements, which presents average gross replacement rates (GRR) as a percentage of previous gross earnings for an average production worker. The benefit measure covers uneven years for the period from 1961 to 2005, where we each impute the value for year t for the missing value in the subsequent, even, year $t+1$. As historical replacement rates, based on average production worker wages, are only available until 2005, we take an index linking approach to extend the coverage of our data to the years 2005 to 2017. The linked index refers to the GRR based on the wage of the average worker. Further details on this procedure are provided in Appendix A.2.1, the robustness of our results to the restriction to the original benefit data is shown in Appendix B.5.

Illustration of the main variables — Figure 1 shows the average unemployment rate and the average replacement rate during the formative years for each birth cohort in four exemplary countries in our sample (Finland, Ireland, Switzerland and Great Britain). Figures A5 and A6 in the Appendix show the data for all the countries in our study.

As Panel (a) depicts, we do not only see substantial variation in experienced unemployment during the impressionable years between countries, but also across birth cohorts. For example, Irish cohorts born between 1960 and 1975 and later than 1985 experienced considerably higher unemployment rates than those born between 1975 and 1985. Reversely, Finnish cohorts born

the 2000s. Third, the use of a dummy variable leads to a constructed auto-correlation between eight cohorts. Whereas this is partly in line with the impressionable years theory, it presents a challenge to the empirical estimation of the effects of such crises. For example, if two crises are considered which lie eight years apart (e.g., in 1975 and 1983), this would imply that 16 succeeding cohorts (i.e., born between 1950 and 1966) were considered identically affected by their macroeconomic environment. Assuming that shocks which are defined over the 10th percentile of the distribution occur at relatively regular intervals, this implies that up to 80 % of the sample is affected by shocks and hence falls into the treatment group. Last, the magnitude of shocks also cannot be distinguished.

¹⁶No cohort in our sample experienced average negative GDP growth during their impressionable years (see Figure A7 in the Appendix for details). Hence, we investigate the robustness of our results by testing whether positive macroeconomic experiences have reversed effects of what we expect for negative experiences (see Section).

in the seventies experienced drastically higher unemployment during their impressionable years than those born in the early sixties or after 1980. Similarly for the unemployment replacement rates (Panel (b)), we see strong between- and within-country variation in what different birth cohorts experienced during their formative years. Whereas cohorts born from between mid 1950s and the mid 1980s experienced steady, but relatively small, increases in unemployment insurance in their early adulthood in Switzerland, Finnish cohorts born between 1950 and 1955 experienced sharp rises in the generosity of unemployment benefits, starting from a slightly higher level. Reverse, later born British cohorts experienced less generous benefits when young than their earlier born compatriots.

Figure 1: Macroeconomic experiences and institutional environment during the impressionable years



Note: The graphs depict the average unemployment rate (Panel 1a) and average replacement rates (Panel 1b) during the impressionable years by birth cohort for the four exemplary countries Finland, Ireland, Switzerland and Great Britain.

Interdependencies between the explanatory variables — While unemployment benefits are not directly tied to business cycles indicators in most developed countries¹⁷, one concern might be that the generosity of unemployment benefits still closely follows changes in the unemployment rate as governments rapidly react to increasing demand for social security in the population (for a more detailed discussion see, e.g., Di Tella and MacCulloch, 2002). For our sample of countries, we find no systematic lagged correlation of changes in the unemployment rate and changes in unemployment benefits. Figure A8 in the Appendix depicts the develop-

¹⁷The US and Canada are exceptions within the OECD. In the US, for example, the number of eligibility weeks for unemployment benefits was increased through the “Emergency Extended Benefit Program” during every recession since World War II (Schwartz, 2013).

ment of both the raw unemployment rate and raw unemployment benefits over time for each country in our sample. Table A2 in the Appendix additionally shows the results of regressing unemployment benefits on changes in the unemployment rate in the preceding seven years (which corresponds to the time frame over which we aggregate the measures for the impressionable years period). While there are positive correlations in the level, which is in line with the theory that a generous unemployment insurance increase equilibrium unemployment (e.g., Blanchard and Wolfers, 2000), no clear pattern of a lagged relationship is visible.

3.3 Sample selection

Data on welfare state measures is available in a comparative form from 1961 onward. As we construct variables for the situation experienced between the age of 18 and 25, our sample is restricted to people born no earlier than 1943. We only consider individuals who fully lived through their impressionable years, i.e., who are older than 25 years at the time they are interviewed. The sample is thus further restricted to individuals born before 1992 as the last year with comparative data on the generosity of unemployment benefits is 2017.¹⁸ Moreover, we include only countries with data from at least five waves to meaningfully apply our estimation strategy.¹⁹ Observations from Germany have to be excluded as the data does not indicate whether individuals were born and raised in the GDR or in the FRG. Thus, we cannot merge the appropriate data on economic conditions during the formative years to German respondents. The same applies for immigrants, which is why we retain only individuals who were born in and are citizens of the country they are surveyed in.²⁰ Further, for all our estimations, we make use of survey weights to ensure that the sample is representative of the general population.

¹⁸With the original replacement rate data reaching to 2005, we are thus only able to consider cohorts born until 1980 in the estimations using the restricted sample (see Section 4.3.)

¹⁹Accordingly, from those countries where data on macroeconomic experiences and gross replacement rates are available, Greece is not considered as observations from the ESS are only available for four waves. Furthermore, Italy is excluded because of few observations in the ESS and because OECD replacement rates only included the (very low) 'ordinary' unemployment benefits without consideration of benefits paid from supplementary funds, such as the "Cassa Integrazione Guadagni" which - though seen as benefits for temporary lay offs - covered a substantial part of benefits of the unemployed in Italy. For further details see Martin (1996).

²⁰While the ESS provides information on the country of origin, the year of migration is only reported from the fifth wave onwards, which is why we do not know in which country individuals lived through their impressionable years for most migrants.

Summary statistics of our main sample with observations from Austria, Belgium, Denmark, Finland, France, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK are reported in Table B1 in the Appendix.

3.4 Empirical strategy

In our empirical analysis, we exploit cross-country variation over time in individuals' experiences during their impressionable years building upon time- and country-specific shocks. Using repeated cross-sectional data, this strategy allows us to include country-specific life-cycle effects (i.e., country-specific linear age trends) to account for the fact that people's preferences might change as they age; as well as non-parametric time trends (i.e., country-specific survey year fixed effects) to control for common economic and political shocks or circumstances that might affect everyone in a given survey year in a given country (such as, for example, the financial crisis 2009/10 or the the income level and the economic inequality more generally).²¹ We also replicate our key results adopting a more restrictive approach by taking, first, cohort fixed effects into account, and second, country-specific generation fixed effects (see Section 4.3).

Whereas previous work focused on economic conditions, we study the joint exposure to some state of the macroeconomy and the prevailing social safety net during the formative years. To test for their potential interaction in terms of a moderation or a learning effect, we thus include an interaction term between the variable measuring the macroeconomic situation and the generosity of unemployment benefits:

$$Y_{ict} = \beta_1 Macro_{c,imp.yrs(18-25)} + \beta_2 UI_{c,imp.yrs(18-25)} + \beta_3 Macro_{c,imp.yrs(18-25)} * UI_{c,imp.yrs(18-25)} + \beta_4 X'_{ict} + \tau_c * age_{it} + \tau_c * \delta_t + \varepsilon_{ict}$$

where i indexes individuals; c indexes countries; t indexes survey years. The dependent variable Y_{ict} is either the measure for the support of redistribution, the placement on the political left-right scale, or, in a robustness test, the voting behavior in the last national election. $Macro$ stands either for the continuous variable average unemployment rate or, in an additional test,

²¹Closely related empirical approaches are used by Giuliano and Spilimbergo (2014), Roth and Wohlfart (2018) or ?.

average GDP growth, in country c during an individual’s formative years (i.e., age 18-25). UI is the average gross replacement rate of the unemployment insurance in country c during the formative years and $Macro*UI$ is the interaction of the two former variables. The variable $\tau_c * age_{it}$ represents the country-specific age trends and $\tau_c * \delta_t$ are country-survey-year fixed effects. X'_{ict} is a matrix of covariates that includes variables which were shown to be significantly related to redistribution preferences in previous studies (for a detailed review, see, e.g., Alesina and Giuliano, 2011). Specifically, these are, first, dummy variables for gender, marital status, current (un)employment status, migration background and religion, and a continuous variable for household size. Second, education (in ISCED 97 categories), household income (in deciles) and past unemployment are added to control for potential “hard” outcomes of experiencing macroeconomic shocks during the impressionable years (see, e.g., Schwandt and von Wachter, 2019).²² ε_{ict} is an idiosyncratic error term, with standard errors being two-way clustered by individuals’ country and year of birth, i.e., under our level of explanatory variation. The results are robust to clustering two-way by individuals’ age and year of birth as in Roth and Wohlfart (2018).²³

4 Results

4.1 Main results

Table 1 reports the results of our main analysis, both for support for redistribution and the self-placement on the political left-right scale. The specification in column 1 replicates the analysis of the impact of unemployment during the impressionable years on preferences for redistribution in later life, as in Giuliano and Spilimbergo (2014), assuming homogeneous effects across countries with different welfare institutions. Contrary to hypothesis 1 stating that adverse macroeconomic conditions during the formative years strengthen support for redistribution, we find, overall, a statistically significant *negative* correlation between exposure to higher

²²As reference categories, we use the fourth decile of household income, the lowest ES-ISCED Category (I) for education and ‘no religion’ for the variable religion. We include individuals both with missing information on household income, as well as missing information on religion in our sample coding them as a separate category. The results are robust to excluding them (see Table B3 in the Appendix).

²³Results available upon request.

unemployment and support for redistribution later on. For the control variables, we observe partial correlations in the expected directions: Individuals with higher education and household incomes are, on average, significantly less in favor of redistribution, while, for example, women are, on average, more in favor of redistribution (see Table B2 in the Appendix with the full output for the control variables). In column 2, we see that the negative partial correlation is slightly smaller when we consider the concurrent generosity of unemployment benefits. Our main interest lies in the specification in column 3 (respectively column 6 for the left-right scale) with the interaction term. Once we take the generosity of unemployment benefits into account that applied at the time, we, first, observe that the negative correlation with unemployment in column 1 hides substantial heterogeneity. Second, considering now an environment without any unemployment insurance (a situation experienced at least by some birth cohorts), we find a statistically significant, positive relationship between higher unemployment during the impressionable years and preferences for redistribution in later life. As an illustration, a 5 %-points higher unemployment rate in this context increases support for redistribution by 0.045 points on the 5-point scale. This is roughly equivalent to the difference between unemployed and employed people, *ceteris paribus*. Second, consistent with hypothesis 2, the positive effect of economic hardship on support for redistribution gets smaller in more generous welfare regimes. Already under the mean level of benefit generosity (i.e., an average replacement rate of 29 %), we find no effect of an increase in the unemployment rate on preferences for redistribution in later life. Third, the strongly negative coefficient for the interaction term suggests that the effect of having experienced a high level of unemployment on support of redistribution is not only offset in an environment with high unemployment benefits, but even reversed. In fact, individuals who experienced high unemployment and a high replacement rate during their impressionable years are rather reluctant to generous redistribution policies today consistent with hypothesis 3. For example, for a benefit level of 48 % (representing the 90th percentile in our sample), a 5 %-point higher unemployment rate is related to a 0.042 points lower support of redistribution. Columns 4 to 6 in Table 1 show that the same relationships are also observed for individuals' self-reported placement on the political left-right spectrum. For a setting without unemployment insurance, we find that a 5 %-points higher unemployment rate shifts political

attitudes around 0.2 points to the left on the 11-point left-right scale. In a regime with a generous replacement rate of 48 %, the same increase in unemployment shifts the self-placement about 0.1 points to the right. For self-reported voting behavior, we find similar results though the effects are not statistically significant at conventional levels. The corresponding results are presented in Tables B8 in the Appendix.

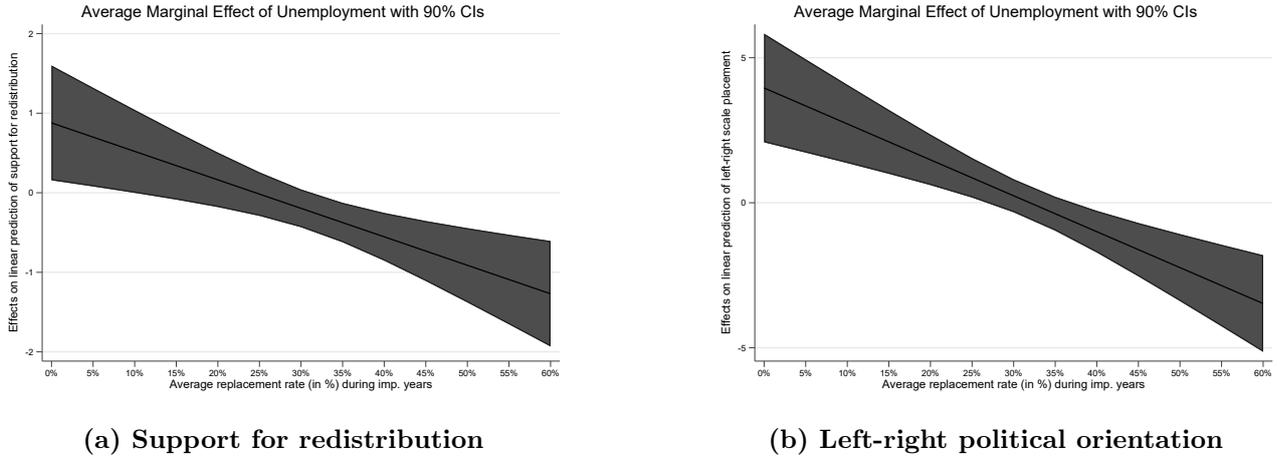
Table 1: Unemployment and benefit generosity during the impressionable years and political attitudes

	Support for Redistribution			Left-Right Scale Placement		
	(1)	(2)	(3)	(4)	(5)	(6)
Avg. UR in imp. yrs (18-25)	-0.281** (0.136)	-0.239* (0.143)	0.893** (0.436)	-0.147 (0.315)	0.012 (0.336)	3.956*** (1.137)
Avg. UI in imp. yrs (18-25)		-0.090 (0.089)	0.084 (0.112)		-0.328 (0.219)	0.244 (0.271)
Avg. UR \times Avg. UI in imp. yrs (18-25)			-3.602*** (1.312)			-12.384*** (3.397)
Individual Controls	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓	✓	✓
Observations	118,978	118,978	118,978	111,299	111,299	111,299
R-squared	0.1374	0.1374	0.1375	0.0679	0.0679	0.0681

Note: The table shows the estimated effects of average unemployment, average unemployment benefits and their interaction during the impressionable years on support for redistribution (column 1-3) and left-right scale placement (column 4-6) using OLS. Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

We illustrate our main findings in two different ways. Figure 2 displays the average marginal effect of experienced unemployment during the impressionable years on the support of redistribution in Panel (a), respectively on left-right political orientation in Panel (b) under differently generous social security systems experienced at the same time. For both dependent variables, we find that with increasing levels of unemployment benefits, the average marginal effect of unemployment experienced between the age of 18 and 25 turns from positive to negative.

Figure 2: Average marginal effects of experienced unemployment on political attitudes under different levels of experienced unemployment benefits during the impressionable years

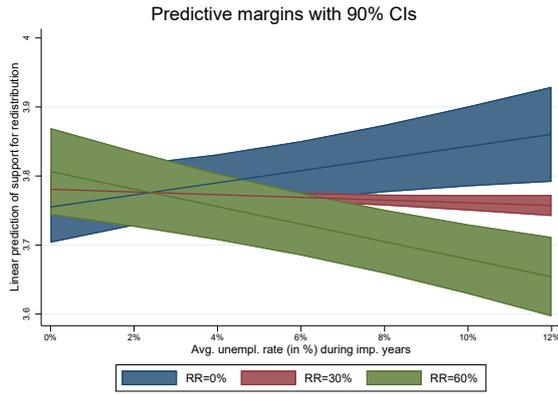


Note: The figures show the average marginal effects of unemployment on linear predictions of support for redistribution (panel 2a) and left-right political orientation (panel 2b) with 90% confidence intervals at different levels of unemployment insurance generosity, based on the OLS regressions in Table 1, Specification 3 (for panel 2a) and Specification 6 (for panel 2b).

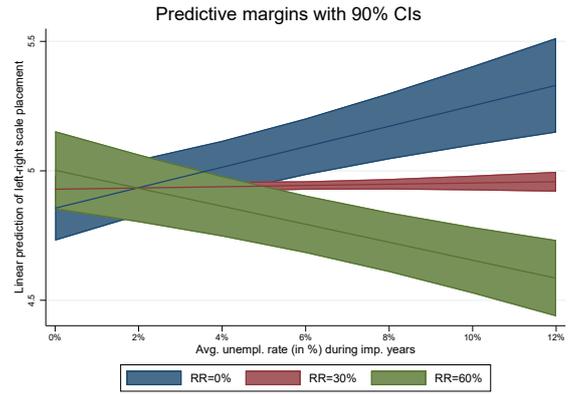
To further illustrate the differential effects of experienced unemployment, depending on the level of unemployment benefits during the same impressionable years, we show linear predictions for both dependent variables given particular levels of unemployment rates and generosity of benefits. For the benefit replacement rate, three levels are differentiated, i.e., no unemployment insurance, an average replacement rate of 30 %, and a very generous system with a replacement rate of 60 %.²⁴ It is clearly revealed that if different welfare regimes are experienced together with high levels of unemployment, people later on in life have a markedly difference stance towards redistribution and towards left-wing politics. Having experienced no public safety net in such a situation is related to higher support for redistribution later, while the combination with a generous safety net entails low support.

²⁴We display unemployment rates of up to 12 % to ensure that we only illustrate predictions for a common data range for which we have observations in our data (see Figure A4 in the Appendix)

Figure 3: Political attitudes and the joint experience of unemployment and unemployment benefits during the impressionable years



(a) Unemployment & support for redistribution



(b) Unemployment & left-right political orientation

Note: The figures show linear predictions of support for redistribution (panel 3a) and left-right political orientation (panel 3b) with 90% confidence intervals. The predictions are for different average rates of experienced unemployment, i.e., 0% to 12%, and three different regimes of unemployment insurance generosity, i.e. a minimum (0%), mean (30%) and maximum (60%) benefit replacement rate (RR), based on the OLS regressions in Table 1, Specification 3 (for panel 3a), respectively Specification 6 (for panel 3b).

The observed partial correlations between a high unemployment rate during the formative years and preferences for redistribution or the left-right political orientation later in life in columns 1 and 4 of Table 1 for our sample of thirteen European countries show into opposite direction from those found by Giuliano and Spilimbergo (2014). As the results of our specifications including the interaction with the welfare regime (columns 3 and 6) indicate, this is possibly driven by the fact that their empirical analysis focuses on the United States, an institutional environment with comparatively less reliance on social insurance, where people are potentially hit hard by economic shocks. Figure A3 in the Appendix shows that the average replacement rate in the US between 1961 and 2017 ($\bar{x}_{US} = 0.139$) is markedly lower than in any country in our sample over the same period ($\bar{x}_{ESS} = 0.299$). Interestingly, the relationship detected in the general population is not observed in a sample of members of Congress in the US. Carreri and Teso (2019) argue that this may be due to Congress members' more affluent, socio-economic backgrounds which insulate them from direct effects of recessions and high unemployment. This private insurance argument on a personal basis is conceptually congruent with our discussion of a buffering effect of social insurance, which protects citizens at least partly from painful consequences of high unemployment. With high unemployment in a welfare state eroding

social work norms, Lindbeck (1995*b*) speculates that egalitarian views may be strengthened, which changes what acceptable income differences are. We do not find empirical support for this prediction. We rather observe the opposite in regimes with very generous welfare-state policies. Having experienced high unemployment in such a regime reduces support for redistribution. This is consistent with learning about disincentive effects and exploitation of the system that people perceive as unfair (as in Bowles and Gintis, 2000).

4.2 Mechanism: Personal Experience

We theoretically propose that people's *experiences* of the economic and institutional environment during their formative years are a factor that shapes their preferences for redistribution. To further assess the relevance of this mechanism, we compare individuals for whom it is likely that they have been more personally affected by the prevailing conditions on the labor market and of the social security system with those for whom this is less likely. Specifically, we test whether the attitudes of individuals with a background of lower socio-economic status (approximated by the father's level of education) are more strongly influenced. Given that unemployment risk is correlated with education, the father's level of education might determine whether an unemployment shock is experienced in the close social environment at an age where the majority of individuals is still at least partly dependent of their parents. Moreover, individuals from lower socio-economic background are more likely to be surrounded by a social network, also outside the family, which is more strongly affected by unemployment shocks and are thus more exposed to these experiences than individuals from higher socio-economic backgrounds. This is particularly important as the proximity to welfare recipients (in a setting with a relatively weak social security net) has been found to increase support of redistributive measures (Luttmer and Singhal, 2011). We therefore expect the effect of experiencing high unemployment for individuals with a lower educated father to be stronger than for those with a higher educated father. As private insurance is less an alternative to social insurance for people with a less affluent background (see, e.g., Carreri and Teso, 2019), we also expect the moderating effect of unemployment benefits to be more pronounced.

Table 2: Unemployment and benefit generosity during the impressionable years and political attitudes for different socio-economic backgrounds

Socio-Economic Background	Support for Redistribution		Left-Right Scale Placement	
	Low	High	Low	High
Avg. UR in imp. yrs (18-25)	1.473*** (0.510)	-0.898 (0.873)	4.668*** (1.237)	1.351 (1.983)
Avg. UI in imp. yrs (18-25)	0.226* (0.134)	-0.221 (0.203)	0.589* (0.304)	-0.378 (0.441)
Avg. UR × Avg. UI in imp. yrs (18-25)	-4.740*** (1.552)	-0.025 (2.638)	-13.462*** (3.675)	-8.261 (5.927)
Individual Controls	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓
Observations	88,111	30,867	82,210	29,089
R-squared	0.1362	0.1330	0.0654	0.0909

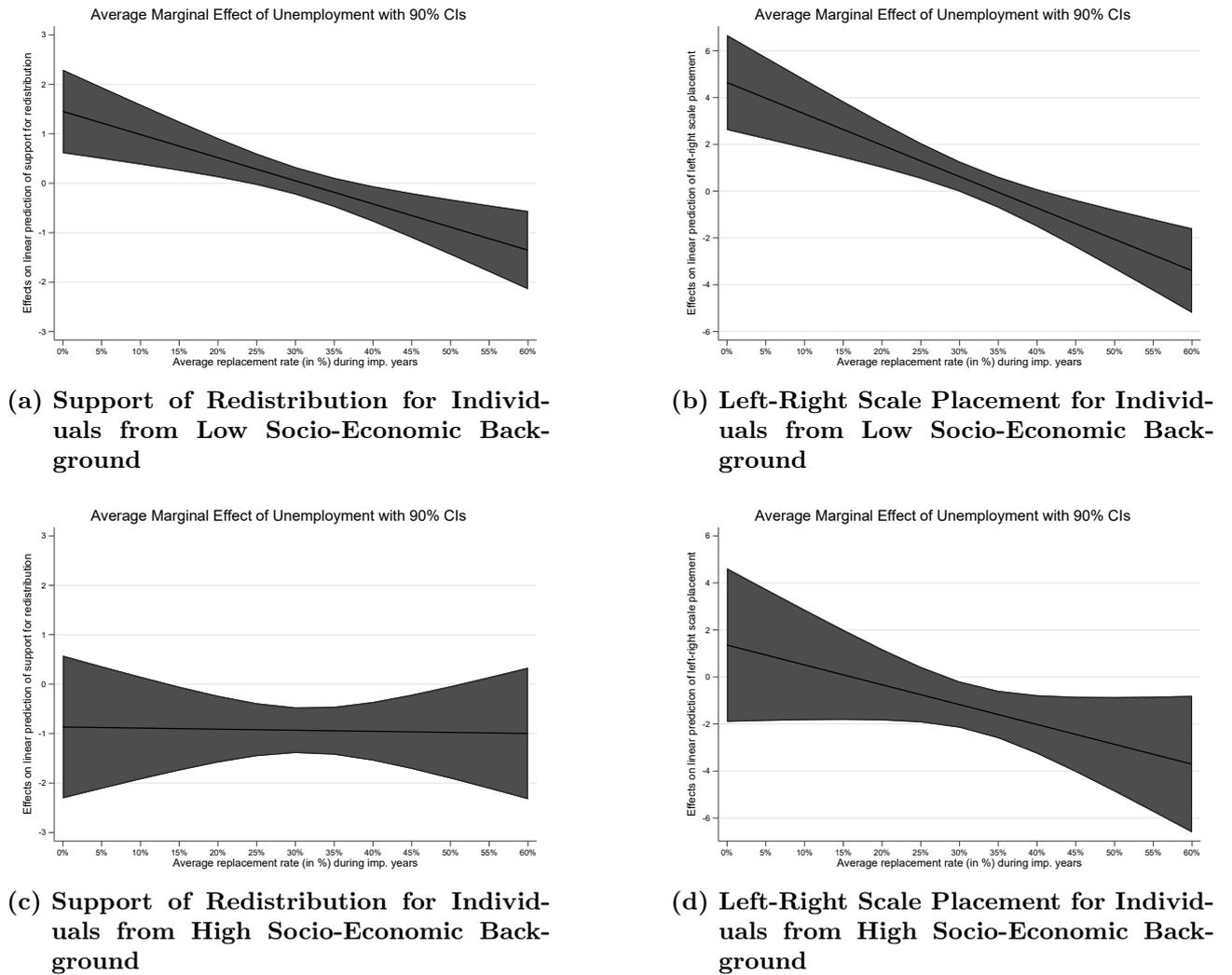
Note: The table shows the estimated effects of the joint experience of average unemployment and average unemployment benefits during the impressionable years on support for redistribution (column 1-2) and left-right political orientation (column 3-4) for two different types of socio-economic backgrounds using OLS. Low socio-economic background refers to individuals whose fathers have at most upper secondary education (ISCED 1-3); high socio-economic background refers to individuals with fathers with at least post-secondary education (ISCED 4-5). Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2 presents the results for the econometric model with the interaction between unemployment and unemployment insurance for separate samples, split by father’s level of education.²⁵ We find qualitatively the same statistical relationships as in the main analysis for those individuals who grew up in a household with a less educated father, which involves about three quarters of the sample. However, the estimated effects of the economic environment on the preferences for redistribution are more pronounced. For example, a 5 % higher average rate of unemployment during the formative years is related to a 0.074 units stronger preference for redistribution in an environment with no unemployment insurance. In Table 1, this effect amounted to 0.045 units for the overall sample. This effect is moderated with a more gener-

²⁵Education in the ESS is coded according to ISCED 97 categories. We split the sample between the third (upper secondary education) and fourth (post-secondary, non-tertiary education) category. Our results are robust to splitting the sample between the fourth and fifth (tertiary education) category (see Table B6 in the Appendix).

ous unemployment insurance and turns into a negative relationship in an environment with a high benefit replacement rate. Panel (a) in Figure 4 depicts this relationship graphically. For people’s self-placement on the political left-right scale (column 3 in Table 2 and Panel (b) in Figure 4), we find a very similar pattern: For those who likely more closely experienced the economic situation during the formative years due to their father’s low socio-economic status, the political orientation towards the left is affected in parallel to their support of redistribution.

Figure 4: Average marginal effects of experienced unemployment on political attitudes under different levels of experienced unemployment benefits during the impressionable years by socio-economic background



Note: The figures show the average marginal effects of unemployment on linear predictions of support of redistribution (panel 4a for individuals with low socio-economic background and panel 4c for individuals with high socio-economic background) and left-right political orientation (panel 4b for low, respectively panel 4d for high socio-economic background) with 90% confidence intervals at different levels of unemployment insurance generosity, based on the OLS regressions in Table 2. Standard errors are two-way clustered by country and year of birth. The graphs depicting the linear predictions can be found in Section B.4 in the Appendix.

For individuals with a high socio-economic background, i.e., about one quarter of the sample, the economic situation during the formative years seems to affect them differently. Panels (c) and (d) in Figure 4 provide an overview. The experience of higher unemployment in an environment with no unemployment insurance is related to lower support of redistribution later on. The relationship between macroeconomic experiences and left-right political attitudes is similar for individuals from higher socio-economic backgrounds to what is found in the overall sample, though the effects are far less pronounced and not statistically different from 0. Taken together it seems that individuals with higher socio-economic backgrounds are less affected by the macroeconomic and institutional environment experienced during the impressionable years. We further test for heterogeneity with regard to people’s own level of education. Individuals with a higher education generally face a lower risk of unemployment. Moreover, with regard to the impressionable years between the age of 18 and 25, higher educated individuals likely experienced the economic situation while still engaged in the education system. They were thus partly shielded from adverse labor market shocks, whereas lower educated individuals had already been in the labor market. It is also generally observed that higher unemployment tends to affect younger and less educated individuals disproportionately more than higher-educated individuals. The estimated differences are similar to the ones when considering the socio-economic background of the father. The results are presented in Table B5 in the Appendix.

4.3 Robustness Tests

Positive GDP growth during impressionable years and political attitudes

For average GDP growth during the impressionable years, we find effects that are rather similar to the ones for unemployment, though with the opposite sign as different states of the macroeconomy are now measured with an indicator for booms. We accordingly describe the results in terms of experiencing a positive macroeconomic situation. As reported in Table 3, column 1, experiencing stronger GDP growth during the impressionable years is overall not systematically correlated with people’s preferences for redistribution. This specification, however, again hides substantial heterogeneity in the relationship depending on the welfare system. The specification in column 3 therefore includes the interaction term, now between GDP growth and the

generosity of the unemployment insurance. It is revealed that high economic growth is related to lower support of redistribution if the boom was experienced in an environment with low unemployment benefits. For average GDP growth of 5 % (instead of 0 %) in a context with no unemployment insurance, people report a 0.11 units weaker preference for redistribution later in life. Differential GDP growth is, however, no more statistically related to preferences for redistribution later on when experienced in a context with a moderately generous unemployment insurance. If high GDP growth is experienced jointly with generous unemployment benefits, people later on more strongly support redistribution.

Table 3: GDP growth & benefit generosity during the impressionable years and political attitudes

	Support for Redistribution			Left-Right Scale Placement		
	(1)	(2)	(3)	(4)	(5)	(6)
Avg. GDP growth in imp. yrs (18-25)	-0.006 (0.004)	-0.007* (0.004)	-0.022*** (0.008)	-0.040*** (0.009)	-0.044*** (0.009)	-0.087*** (0.022)
Avg. UI in imp. yrs (18-25)		-0.149* (0.085)	-0.307*** (0.105)		-0.481** (0.211)	-0.919*** (0.290)
Avg. GDP growth × Avg. UI in imp. yrs (18-25)			0.058** (0.027)			0.158** (0.073)
Individual Controls	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓	✓	✓
Observations	118,978	118,978	118,978	111,299	111,299	111,299
R-squared	0.1374	0.1375	0.1375	0.0681	0.0682	0.0683

Note: The table shows the estimated effects of average GDP growth, average unemployment benefits and their interaction during the impressionable years on support for redistribution (column 1-3) and left-right political orientation (column 4-6) using OLS. Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The results in columns 4 to 6 of Table 3 for placement on the left-right scale show a relationship between the economic experiences in early adulthood and political attitudes later on that is consistent with the stated support of redistribution. According to column 6, the experience of a boom (5 % growth rather than no growth) during the formative years in an environment with no unemployment insurance shifts people 0.435 units to the right later in life. Experiencing a similar boom in a system with a 60 % benefit replacement rate, however, leaves them with a political orientation that is 0.04 units more to the left, i.e., their generally more rightist

orientation is only slightly shifted. Overall, the conclusions discussed for the indicator of busts in terms of high unemployment above hold with a reverse sign for the boom indicator GDP growth.

Potential Mechanism: Trust in the parliament

A potential concern is that our results are driven by underlying variation in the trust that individuals hold in their government. Previous evidence indicates that economic shocks tend to erode trust in political institutions (e.g., Algan et al., 2017) and to strengthen populist parties' vote shares (e.g., Guiso et al., 2019). Gräber and Zimmermann (2019) furthermore show that this relationship does not only hold in the short-run, but that there is also a robust long-run link between the experience of banking crises and subsequent reduced trust, not only in financial but also in political institutions. In our context, a large increase in the number of unemployed people, and thus of official beneficiaries of the social security system, might jeopardize a government's ability to effectively control their entitlements. Accordingly, the negative effect of the joint experience of high unemployment and high benefits on support for redistribution might not only reflect a distrust in the benefit morale of beneficiaries, but also in the government to monitor them. We therefore re-estimate our model additionally controlling for the potential mediator trust in the country's parliament.²⁶ Table B9 in the Appendix shows the results. While we do find a statistically significant correlation between an individual's current level of trust in parliament and political attitudes, the trust variable cannot account for a substantial fraction of the observed relationship. The coefficients of our main explanatory variables are reduced by less than 10 %, both for support for redistribution as well as people's left-right orientation.

Generation Effects

In this section, we address the issue that the results of our analysis might be driven by cohort or generation-specific preferences which are not directly related to the macroeconomic, respectively institutional, conditions those individuals faced, but are rather independent generation-specific attitudes. We approach this concern by testing the robustness of our results for a large set of additional control variables. It has to be considered that these specifications exhaust a

²⁶We also run a regression controlling for trust in the legal system. Our results remain robust and for trust in the legal system, we find a very similar relationship to the one observed for trust in parliament, though the partial correlation with support for redistribution is weaker. The results are available upon request.

large proportion of our identifying variation. First, we control for cohort fixed effects. This changes our empirical strategy to a within-year-of-birth identification, only considering different conditions across countries.²⁷ Second, we use country-specific generation fixed effects, exploiting only variation within generation brackets within a country. For the latter, we take two different definitions of generations into account.²⁸ Table 4 shows the results. Overall, we observe that the statistical relationships of our explanatory variables are robust to the inclusion of the additional control variables.

Table 4: Average unemployment and benefit generosity during the impressionable years and political attitudes (with cohort/generation fixed effects)

	Support for Redistribution			Left-Right Scale Placement		
	(1)	(2)	(3)	(4)	(5)	(6)
Avg. UR in imp. yrs (18-25)	2.295*** (0.501)	1.266* (0.684)	2.038*** (0.767)	2.837*** (0.978)	9.083*** (1.782)	8.447*** (1.971)
Avg. UI in imp. yrs (18-25)	0.130 (0.080)	0.359** (0.140)	0.352** (0.161)	-0.295** (0.149)	1.385*** (0.358)	0.829** (0.386)
Avg. UR \times Avg. UI in imp. yrs (18-25)	-5.582*** (1.306)	-3.978** (1.920)	-7.029*** (2.401)	-6.414*** (2.473)	-27.245*** (5.126)	-27.982*** (5.995)
Individual Controls	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓
Country-Age Trend		✓	✓		✓	✓
Cohort FE	✓			✓		
Country-Generation Group FE (1)		✓			✓	
Country-Generation Group FE (2)			✓			✓
Observations	118,978	118,978	118,978	111,299	111,299	111,299
<i>R</i> -squared	0.1365	0.1380	0.1381	0.0695	0.0690	0.0697

Note: The table shows the estimated effects of the joint experience of average unemployment and average unemployment benefits during the impressionable years on support for redistribution (columns 1-3) and left-right scale placement (columns 4-6) using OLS, additionally controlling for cohort fixed effects (in columns 1 and 3) and two different specifications of country-specific generation group fixed effects. Country-Generation Group FE (1) in columns 2 and 5 uses country-specific dummy variables for three different generations in each country: 1943-1957, 1958-1972, 1973-1992. Country-Generation Group FE (2) in columns 3 and 6 uses dummy variables for four different generations in each country: 1943-1955, 1956-1967, 1968-1979 and 1980-1992. Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

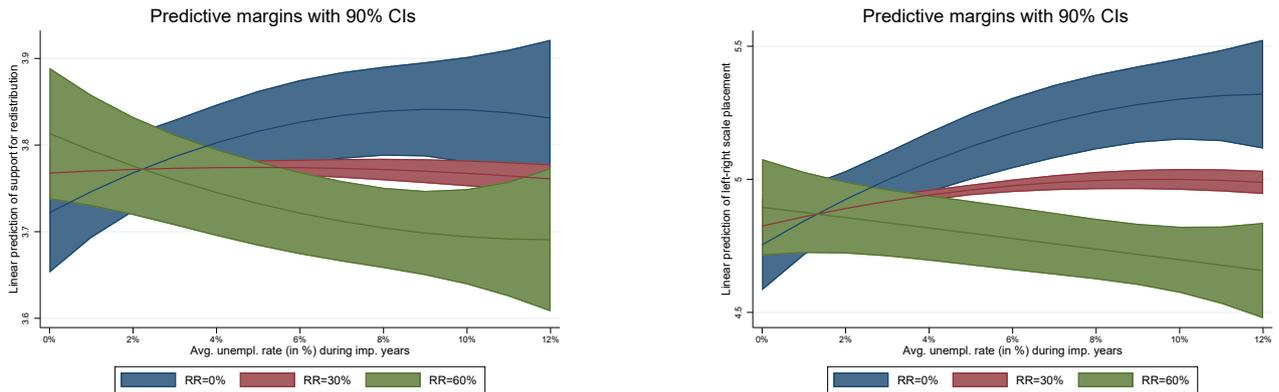
²⁷Due to our identification strategy based on country-cohort specific experiences, we cannot control for country-specific cohort fixed effects.

²⁸There is no consensus about how to define a generation. As previous studies that estimated the long-term effects of experiences in late adulthood applied different generation brackets, we show our results for two different definitions (following the strategy by ?): In columns 2 and 5, we define the following cohort-brackets: 1943-1957, 1958-1972, 1973-1992; in columns 3 and 6, we define them as follows: 1943-1955, 1956-1967, 1968-1979 and 1980-1992

Non-Linear Specification

In this section, we further show the results for a non-linear specification of our main model. We want to make sure that the net negative partial correlation of unemployment at higher levels of unemployment benefits does not represent a statistical artefact of the linear specification. Precisely, we add a quadratic term of the unemployment rate to our model to ensure that the interaction we observe does not actually arise from a priorly unspecified non-linear main effect of unemployment which is implicitly enclosed in the interaction term. Figure 5 presents the results of this specification. We find no indication of a statistically significant non-linear relationship between the unemployment rate in early adulthood and political attitudes later on, whereas the partial net negative correlation for high benefit levels remains observable also in the specification involving the quadratic term.²⁹

Figure 5: Political attitudes and the joint experience of unemployment and unemployment benefits during the impressionable years (non-linear specification)



(a) Unemployment & support for redistribution

(b) Unemployment & left-right political orientation

Note: The figures show linear predictions of support for redistribution (panel 5a) and left-right political orientation (panel 5b) with 90% confidence intervals. The predictions are for different levels of average unemployment and three different regimes of unemployment insurance generosity, i.e. a minimum (0%), mean (30%) and maximum (60%) benefit replacement rate (RR), based on the OLS regressions in Table B11, Specification 2 (for panel 5a), respectively Specification 4 (for panel 5b).

5 Conclusion

Using a large cross-national dataset, our analysis finds further evidence that macroeconomic experiences during the impressionable years have long-lasting and robust effects on support for

²⁹The corresponding Table B11 can be found in the Appendix.

redistribution and people's political orientation more generally. Importantly, we show that it is not just the exposure to lower or higher unemployment per se that shapes political attitudes. Individuals rather learn and form beliefs based on the joint experience of macroeconomic conditions and the social protection from a more or less generous unemployment insurance. Specifically, we find, first, that individuals who experienced high unemployment (or low GDP growth) under a welfare regime with low benefits are more in favor of redistribution later in life and state a political position more orientated to the left. This finding is consistent with the prominent work of Giuliano and Spilimbergo (2014) for the US. Moreover, we see that these effects are particularly pronounced for individuals from lower socio-economic backgrounds, i.e., those individuals for whom private insurance is a less viable alternative to social insurance. Second, we find that the effects on political attitudes are offset in an environment with a welfare regime of medium generosity. Third, we observe that the relationship is even reversed when an adverse economic situation was experienced jointly with a highly generous unemployment insurance. People turn out less supportive of redistribution and orient themselves more towards the right on the political spectrum later in life.

We thus contribute to the growing literature on the early-life determinants of preferences for redistribution. Consistent with earlier research, our analysis provides evidence that early-life macroeconomic conditions matter for the formation of political attitudes. However, our analysis also demonstrates that the contemporary welfare state structure is crucial to be considered in such analyses. We conclude that the wider institutional context has to be considered if one aims to understand how the exposure to macroeconomic conditions shapes people's beliefs and political preferences during their formative years. In particular, the development of the welfare state seems crucial for how economic booms and busts affect the evolution of preferences and norms in society and thus finally feedback on institutional change. Speculating ahead, our evidence suggests that the interaction between economic shocks and the generosity of social insurance form people's attitudes in a way that gives rise to a pendular movement between welfare regimes. Obviously, this is a big leap and needs further research.

References

- Ajzenman, Nicolas, Aksoy, Cevat Giray, and Martin Fiszbein. 2020. “Institutions Shape Culture: The Civic Imprint of Democracy.” Mimeo, Boston, MA: Boston University.
- Aksoy, Cevat G., Barry Eichengreen, and Orkun Saka. 2020. “The Political Scar of Epidemics.” NBER Working Paper w27401, Cambridge, MA: National Bureau of Economic Research.
- Alesina, Alberto, and George-Marios Angeletos. 2005. “Fairness and Redistribution.” *American Economic Review*, 95(4): 960–980.
- Alesina, Alberto, and Nicola Fuchs-Schündeln. 2007. “Good-Bye Lenin (or Not?): The Effect of Communism on People’s Preferences.” *American Economic Review*, 97(4): 1507–1528.
- Alesina, Alberto, and Paola Giuliano. 2011. “Preferences for Redistribution.” In *Handbook of Social Economics*. Vol. 1A, , ed. Jess Benhabib, Matthew O. Jackson and Alberto Bisin, 93–131. Amsterdam, Netherlands: North Holland.
- Alesina, Alberto, and Paola Giuliano. 2015. “Culture and Institutions.” *Journal of Economic Literature*, 53(4): 898–944.
- Alesina, Alberto, Elie Murard, and Hillel Rapoport. 2019. “Immigration and Preferences for Redistribution.” NBER Working Paper w25562, Cambridge, MA: National Bureau of Economic Research.
- Algan, Yann, Elias Papaioannou, Sergei Guriev, and Evgenia Passari. 2017. “The European Trust Crisis and the Rise of Populism.” *Brookings Paper on Economic Activity*, Fall: 309–382.
- Barro, Robert J., and José F. Ursua. 2008. “Macroeconomic Crises since 1870.” *Brookings Paper on Economic Activity*, Spring: 255–350.
- Bauer, Michal, Alessandra Cassar, Julie Chytilová, and Joseph Henrich. 2014. “War’s Enduring Effects on the Development of Egalitarian Motivations and In-Group Biases.” *Psychological Science*, 25(1): 47–57.
- Bénabou, Roland, and Efe A. Ok. 2001. “Social Mobility and the Demand for Redistribution: The POUM Hypothesis.” *Quarterly Journal of Economics*, 116(2): 447–487.
- Blanchard, Olivier, and Justin Wolfers. 2000. “The Role of Shocks and Institutions in the Rise of European Unemployment: the Aggregate Evidence.” *Economic Journal*, 110(462): 1–33.
- Bowles, Samuel. 1998. “Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions.” *Journal of Economic Literature*, 36(1): 75–111.
- Bowles, Samuel, and Herbert Gintis. 2000. “Reciprocity, Self-Interest and the Welfare State.” *Nordic Journal of Political Economy*, 26: 33–53.
- Camerer, Colin, and Teck-Hua Ho. 1999. “Experience-Weighted Attraction Learning in Normal Form Games.” *Econometrica*, 67(4): 827–874.

- Card, David, and Phillip B. Levine. 2000. "Extended Benefits and the Duration of UI Spells: Evidence from the New Jersey Extended Benefit Program." *Journal of Public Economics*, 78: 107–138.
- Carreri, Maria, and Edoardo Teso. 2019. "Economic Recessions and Congressional Preferences for Redistribution." NICEP Working Paper 2016-07, Nottingham, UK:Nottingham Interdisciplinary Centre for Economic and Political Research.
- Castles, Francis G., and Peter Mair. 1984. "Left-Right Political Scales: Some 'Expert' Judgments." *European Journal of Political Research*, 12(1): 73–88.
- Choi, James J., David Laibson, Brigitte C. Madrian, and Andrew Metrick. 2009. "Reinforcement Learning and Savings Behavior." *Journal of Finance*, 64(6): 2515–2534.
- Cordes, Henning, and Maik Dierkes. 2017. "About Depression Babies and Red Diaper Babies: Do Macroeconomic Experiences Affect Everybody's Risk Taking in the Same Way?" *Journal of Behavioral and Experimental Finance*, 13: 25–27.
- Corneo, Giacomo. 2012. "Work Norms and the Welfare State." *CESifo Economic Studies*, 58(4): 599–625.
- Cotofan, Maria, Lea Cassar, Robert Dur, and Stephan Meier. 2021. "Macroeconomic Conditions When Young Shape Job Preferences For Life." *Review of Economics and Statistics (forthcoming)*.
- Cruces, Guillermo, Ricardo Perez-Truglia, and Martin Tetaz. 2013. "Biased Perceptions of Income Distribution and Preferences for Redistribution: Evidence from a Survey Experiment." *Journal of Public Economics*, 98: 100–112.
- Di Tella, Rafael, and Robert MacCulloch. 2002. "The Determination of Unemployment Benefits." *Journal of Labor Economics*, 20(2): 404–434.
- Emmenegger, Patrick, Paul Marx, and Dominik Schraff. 2015. "Labour Market Disadvantage, Political Orientations and Voting: How Adverse Labour Market Experiences Translate into Electoral Behaviour." *Socio-Economic Review*, 13(2): 189–213.
- European Commission. 2019. "Annual Macro-Economic Database of the European Commission (AMECO)." Brussels, Belgium:European Commission.
- Fehr, Ernst, and Karla Hoff. 2011. "Introduction: Tastes, Castes and Culture: The Influence of Society on Preferences." *Economic Journal*, 121(556): 396–412.
- Fong, Christina. 2001. "Social Preferences, Self-interest, and the Demand for Redistribution." *Journal of Public Economics*, 82: 225–246.
- Friehe, Tim, and Markus Pannenberg. 2020. "Time Preferences and Political Regimes: Evidence from Reunified Germany." *Journal of Population Economics*, 33(1): 349–387.

- Fuchs-Schündeln, Nicola, and Matthias Schündeln. 2015. "On the Endogeneity of Political Preferences: Evidence from Individual Experience with Democracy." *Science*, 347(6226): 1145–1148.
- Galbiati, Roberto, Emeric Henry, and Nicolas Jacquemet. 2017. "Spillovers, Persistence and Learning: Institutions and the Dynamics of Cooperation." CEPR Discussion Papers DP12128, London, UK:Centre for Economic Policy Research.
- Gangl, Markus. 2004. "Welfare States and the Scar Effects of Unemployment: A Comparative Analysis of the United States and West Germany." *American Journal of Sociology*, 109(6): 1319–1364.
- Giuliano, P., and A. Spilimbergo. 2014. "Growing up in a Recession." *Review of Economic Studies*, 81(2): 787–817.
- Glenn, Norval D. 1974. "Aging and Conservatism." *Annals of the American Academy of Political and Social Science*, 415: 176–186.
- Gräber, Thomas, and Tom Zimmermann. 2019. "Breaking Trust: On the Persistent Effect on Banking Crisis Experience." Mimeo, Bonn, Germany:Rheinische Friedrich-Wilhelms-Universität.
- Guiso, Luigi, Helios Herrera, Massimo Morelli, and Tommaso Sonno. 2019. "Global Crises and Populism: The Role of Eurozone Institutions." *Economic Policy*, 34(97): 95–139.
- Halla, Martin, Mario Lackner, and Friedrich G. Schneider. 2010. "An Empirical Analysis of the Dynamics of the Welfare State: The Case of Benefit Morale." *Kyklos*, 63(1): 55–74.
- Heinemann, Friedrich. 2008. "Is the Welfare State Self-Destructive? A Study of Government Benefit Morale." *Kyklos*, 61(2): 237–257.
- Hertwig, Ralph, Greg Barron, Elke U. Weber, and Ido. Erev. 2004. "Decisions from Experience and the Effect of Rate Events in Risky Choice." *Psychological Science*, 15(8): 534–539.
- Huber, John, and Ronald Inglehart. 1995. "Expert Interpretations of Party Space and Party Locations in 42 Societies." *Party Politics*, 1(1): 73–111.
- Kesternich, Iris, Bettina Siflinger, James P. Smith, and Joachim K. Winter. 2014. "The Effects of World War II on Economic and Health Outcomes across Europe." *Review of Economics and Statistics*, 96(1): 103–118.
- Krosnick, Jon A., and Duane F. Alwin. 1989. "Aging and Susceptibility to Attitude Change." *Journal of Personality and Social Psychology*, 57(3): 416–425.
- Lalive, Rafael. 2007. "Unemployment Benefits, Unemployment Duration, and Post-Unemployment Jobs: A Regression Discontinuity Approach." *American Economic Review*, 97(2): 108–112.
- Lindbeck, Assar. 1995a. "Hazardous Welfare-State Dynamics." *American Economic Review*, 85(2): 9–15.

- Lindbeck, Assar. 1995*b*. “Welfare State Disincentives with Endogenous Habits and Norms.” *Scandinavian Journal of Economics*, 97(4): 477–494.
- Lindbeck, Assar, Sten Nyberg, and Jörgen W. Weibull. 1999. “Social Norms and Economic Incentives in the Welfare State.” *Quarterly Journal of Economics*, 114(1): 1–35.
- Lindbeck, Assar, Sten Nyberg, and Jörgen W. Weibull. 2003. “Social Norms and Welfare State Dynamics.” *Journal of the European Economic Association*, 1(2/3): 533–542.
- Ljunge, Martin. 2012. “The Spirit of the Welfare State? Adaptation in the Demand for Social Insurance.” *Journal of Human Capital*, 6(3): 187–223.
- Lüchinger, Simon, Stephan Meier, and Alois Stutzer. 2010. “Why Does Unemployment Hurt the Employed? Evidence from the Life Satisfaction Gap Between the Public and the Private Sector.” *Journal of Human Resources*, 45(4): 998–1045.
- Luttmer, Erzo F. P., and Monica Singhal. 2011. “Culture, Context, and the Taste for Redistribution.” *American Economic Journal: Economic Policy*, 3(1): 157–179.
- Malmendier, Ulrike, and Leslie Sheng Shen. 2018. “Scarred Consumption.” NBER Working Paper w24696, Cambridge, MA: National Bureau of Economic Research.
- Malmendier, Ulrike, and Stefan Nagel. 2011. “Depression Babies: Do Macroeconomic Experiences Affect Risk Taking?” *Quarterly Journal of Economics*, 126(1): 373–416.
- Mannheim, Karl. 1964. “Das Problem der Generationen.” In *Karl Mannheim: Wissenssoziologie. Auswahl aus dem Werk.*, ed. Kurt H. Wolff, 509–565. Berlin, Germany:Luchterhand.
- Margalit, Yotam. 2013. “Explaining Social Policy Preferences: Evidence from the Great Recession.” *American Political Science Review*, 107(1): 80–103.
- Martin, John P. 1996. “Measures of Replacement Rates for the Purpose of International Comparisons: A Note.” *OECD Economic Studies*, No. 26, 1.
- Massenot, Baptiste, and Giang Nghiem. 2019. “Depressed Demand and Supply.” SAFE Working Papers 257, Frankfurt, Germany:Leibniz Institute for Financial Research SAFE.
- McAdams, Dan P., and Bradley D. Olson. 2010. “Personality Development: Continuity and Change Over the Life Course.” *Annual Review of Psychology*, 61: 517–542.
- Meltzer, Allan H., and Scott F. Richard. 1981. “A Rational Theory of the Size of Government.” *Journal of Political Economy*, 89(5): 914–927.
- Neundorf, Anja, and Stuart Soroka. 2018. “The Origins of Redistributive Policy Preferences: Political Socialisation With and Without a Welfare State.” *West European Politics*, 41(2): 400–427.
- OECD. 2007. “OECD Tax-Benefit Models - The Historic OECD Summary Measure of Benefit Entitlements, 1961-2005.” Paris, France:OECD, available from http://www.oecd.org/els/soc/GRR_EN.xlsb.

- OECD. 2020. “OECD.STAT Gross Replacement Rates in unemployment.” Paris, France:OECD, available from <https://stats.oecd.org/Index.aspx?DataSetCode=GRR>.
- O’Grady, Tom. 2019. “How do Economic Circumstances Determine Preferences? Evidence from Long-run Panel Data.” *British Journal of Political Science*, 49(4): 1381–1406.
- Oreopoulos, Philip, Till von Wachter, and Andrew Heisz. 2012. “The Short- and Long-Term Career Effects of Graduating in a Recession.” *American Economic Journal: Applied Economics*, 4(1): 1–29.
- Piketty, Thomas. 1995. “Social Mobility & Redistributive Policies.” *Quarterly Journal of Economics*, 110(3): 551–584.
- Reeskens, Tim, and Leen Vandecasteele. 2017. “Hard Times and European Youth. The Effect of Economic Insecurity on Human Values, Social Attitudes and Well-Being.” *International Journal of Psychology*, 52(1): 19–27.
- Roth, Christopher, and Johannes Wohlfart. 2018. “Experienced Inequality and Preferences for Redistribution.” *Journal of Public Economics*, 167: 251–262.
- Schwandt, Hannes, and Till von Wachter. 2019. “Unlucky Cohorts: Estimating the Long-Term Effects of Entering the Labor Market in a Recession in Large Cross-Sectional Data Sets.” *Journal of Labor Economics*, 37(1): 161–198.
- Schwartz, Jeremy. 2013. “Unemployment Insurance and the Business Cycle: What Adjustments are Needed?” *Southern Economic Journal*, 79(3): 680–702.
- Shigeoka, Hitoshi. 2019. “Long-Term Consequences of Growing up in a Recession on Risk Preferences.” NBER Working Paper w26352, Cambridge, MA: National Bureau of Economic Research.
- Simonsohn, Uri, Niklas Karlsson, George Loewenstein, and Dan Ariely. 2008. “The Tree of Experience in the Forest of Information: Overweighing Experienced Relative to Observed Information.” *Games and Economic Behavior*, 62(1): 263–286.
- Sinn, Hans-Werner. 1995. “A Theory of the Welfare State.” *Scandinavian Journal of Economics*, 97(4): 495–526.
- Sjöberg, Ola. 2010. “Social Insurance as a Collective Resource: Unemployment Benefits, Job Insecurity and Subjective Well-Being in a Comparative Perspective.” *Social Forces*, 88(3): 1281–1304.
- Slotwinski, Michaela, and Alois Stutzer. 2018. “Women Leaving the Playpen: The Emancipating Role of Female Suffrage.” CESifo Working Papers Nr. 7002, Munich, Germany:CESifo.
- Voßemer, Jonas, Michael Gebel, Kadri Täht, Marge Unt, Björn Högberg, and Mattias Strandh. 2018. “The Effects of Unemployment and Insecure Jobs on Well-Being and Health: The Moderating Role of Labor Market Policies.” *Social Indicators Research*, 138(3): 1229–1257.
- Wulfgramm, Melike. 2014. “Life Satisfaction Effects of Unemployment in Europe: The Moderating Influence of Labour Market Policy.” *Journal of European Social Policy*, 24(3): 258–272.

Experiencing Booms and Busts in the Welfare State and Support for Redistribution

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April 2021

Online Appendix

Contents

A Data	1
A.1 Support for Redistribution Measure	1
A.2 Macroeconomic Data	3
A.2.1 Details on Extension of Replacement Rate Data	3
A.2.2 Average Replacement Rates in Europe and the US across time	5
A.2.3 Details on Macroeconomic Conditions during the Impressionable Years	6
A.2.4 Interdependencies between the Explanatory Variables	10
B Additional Results	12
B.1 Descriptive Statistics	12
B.2 Individual Control Variables	13
B.3 Sensitivity Analyses	15
B.4 Mechanism: Personal Experience	17
B.5 Further Robustness Tests	20

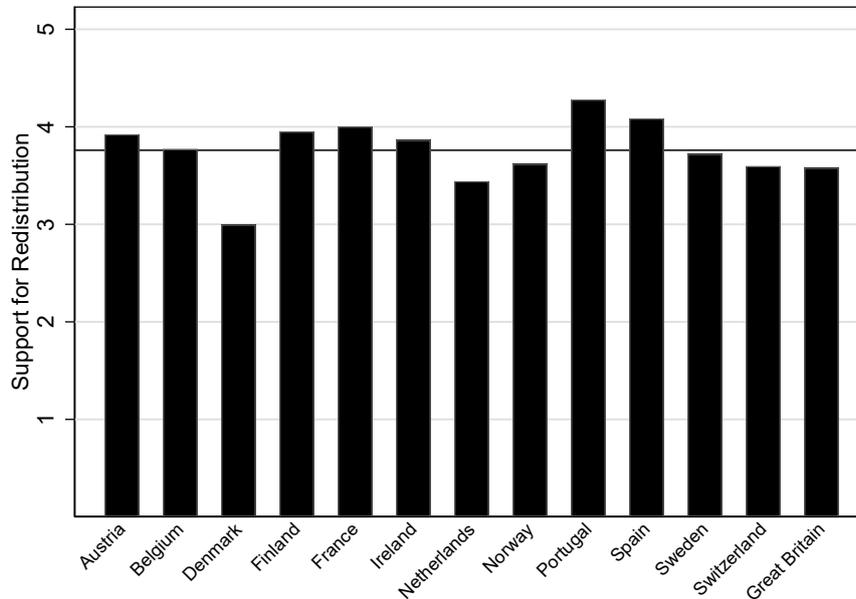
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A Data

A.1 Support for Redistribution Measure

Figure A1: Mean support for redistribution by country



Note: The figure shows average agreement to the statement “The government should take measures to reduce differences in income levels”, measured on a scale from (1) “Disagree Strongly” to (5) “Agree Strongly” by country. The horizontal line indicates the mean across countries ($\bar{x} = 3.765$).

Correlations with special module questions — Next to our main measure of support for redistribution from the ESS core module, the rotating modules in wave 4 (2008) and wave 8 (2016) include a rich set of specific questions towards welfare. Following Alesina, Murard and Rapoport (2019), to validate our main measure, we report the correlations between the core module measure (Redist) and the following special module questions in Table A1:

- Redist: “The government should take measures to reduce differences in income levels” (from (1) “Disagree Strongly” to (5) “Agree Strongly” (recoded))
- Var 1: “Is it the governments responsibility to ensure a reasonable standard of living for the old?” (from (0) “Not governments’ responsibility at all” to (10) “Entirely governments’ responsibility”)
- Var 2: “Is it the governments responsibility to ensure a reasonable standard for the unemployed?” (from (0) “Not governments’ responsibility at all” to (10) “Entirely governments’ responsibility”)
- Var 3: “Social benefits/services place too great strain on the economy” (from (1) “Disagree Strongly” to (5) “Agree Strongly”)

- Var 4: “Social benefits/services cost businesses too much in taxes/charges” (from (1) “Disagree Strongly” to (5) “Agree Strongly”)
- Var 5: “Social benefits/services make people lazy” (from (1) “Disagree Strongly” to (5) “Agree Strongly”)

Table A1: Cross-correlation of welfare attitudes

	Var 1	Var 2	Var 3	Var 4	Var 5
Government should reduce differences in income levels	0.456*** (0.036)	0.323*** (0.034)	-0.085*** (0.020)	-0.085*** (0.020)	-0.102*** (0.021)
Observations	24636	24723	24211	23890	24585

Note: The table shows the correlations between the core module measure for support for redistribution (Redist) and five questions from the rotating modules in wave 4 and wave 8 (Var 1-Var 5). Standard errors are two-way clustered by country and year and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.2 Macroeconomic Data

A.2.1 Details on Extension of Replacement Rate Data

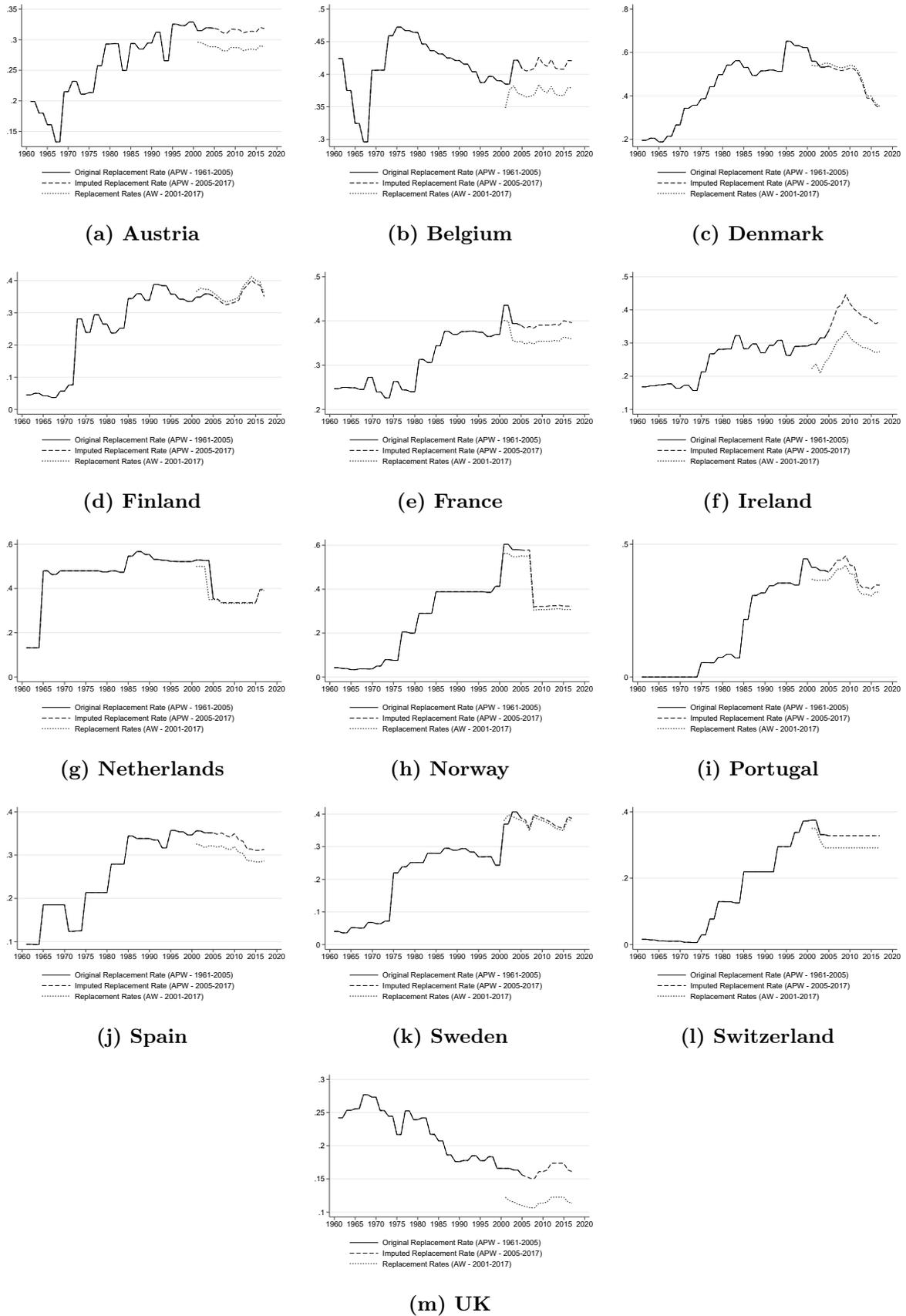
In this section, we describe the procedure we follow to derive a continuous measure for the generosity of unemployment benefits spanning over the period from 1961 to 2017 by extending the original historical gross replacement rates (HGRR) data that reaches from 1961 to 2005. The HGRR summary measure for the replacement rate is calculated as the average annual benefit received by *production* workers associated with three different family types (single, married with a dependent spouse, married with a working spouse) at two levels of earnings (67 % and 100 % of average annual earnings) for three different durations (1 year, 2-3 years, and 4-5 years). Yet, Average Production Worker (APW) wages, on which this calculation was based, have not been collected by the OECD since 2005. Since 2001, the OECD publishes gross replacement rates (GRR) measures based on Average Worker (AW) wages. As AW wages are, in most cases, higher than APW wages; in the case of fixed amount benefit payments or maximum ceilings of benefit payments, benefits for an AW are thus lower than for an APW, restraining us from simply appending the later measures to the earlier time series. To derive a continuous measure, we, in a first step, calculate average replacement rates based on the GRR data, using the same definition as for the summary measure of the HGRR, precisely by excluding values for families with children (as they were not included in the HGRR) and averaging the monthly values available for the GRR data to the same period definition (i.e., 1 year, 2-3 years, 4-5 years) as the HGRR data. In a next step, we then calculate the growth rate in the GRR and use this index to carry forward the trend in the HGRR measure:

$$\text{HGRR}(\text{APW})_t = \text{HGRR}(\text{APW})_{t-1} * \frac{\text{GRR}(\text{AW})_t}{\text{GRR}(\text{AW})_{t-1}}$$

Figure A2 shows the development of the two original measures HGRR (for the years 1961 to 2005) and GRR (for the years 2001 to 2017) as well as of the imputation for the APW measure (for the years 2005 to 2017).¹

¹Note that the HGRR data is a biannual measure for uneven years. As we imputed preceding values for the even years this explains potentially slightly diverging developments between the HGRR-APW measure and the GRR-AW measure in the years 2002 and 2004.

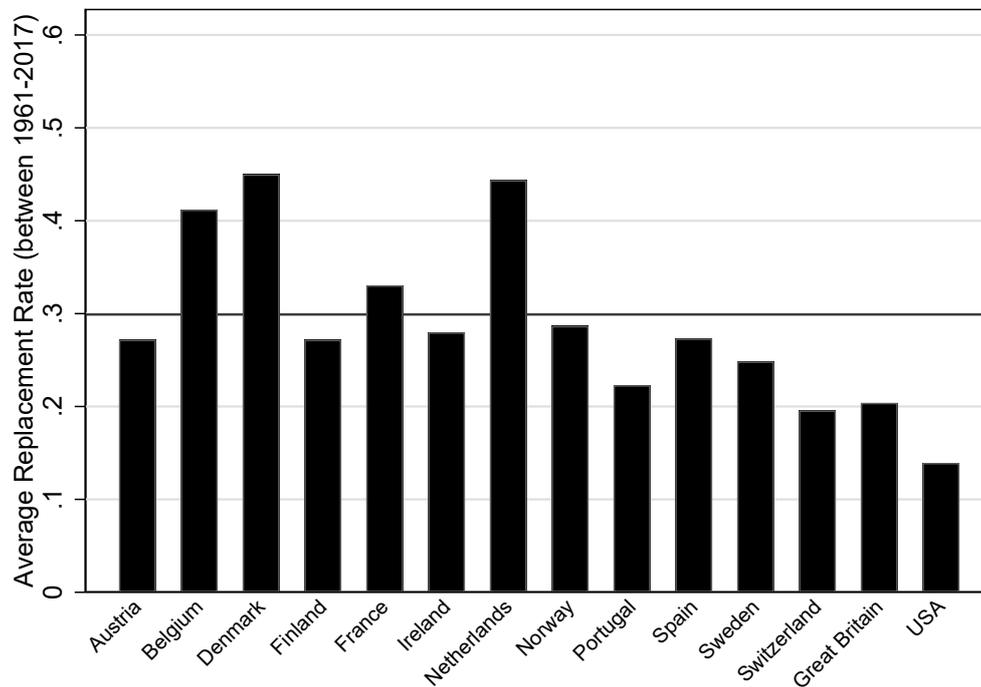
Figure A2: APW and AW gross replacement rate measures over time



Note: The figures depict the development of the historical gross replacement rates, based on APW wages (solid line) between 1961 and 2005; the gross replacement rate measures, based on AW wages (dotted line) between 2001 and 2017; as well as the imputed gross replacement rate for the years 2005 to 2017 (dashed line).

A.2.2 Average Replacement Rates in Europe and the US across time

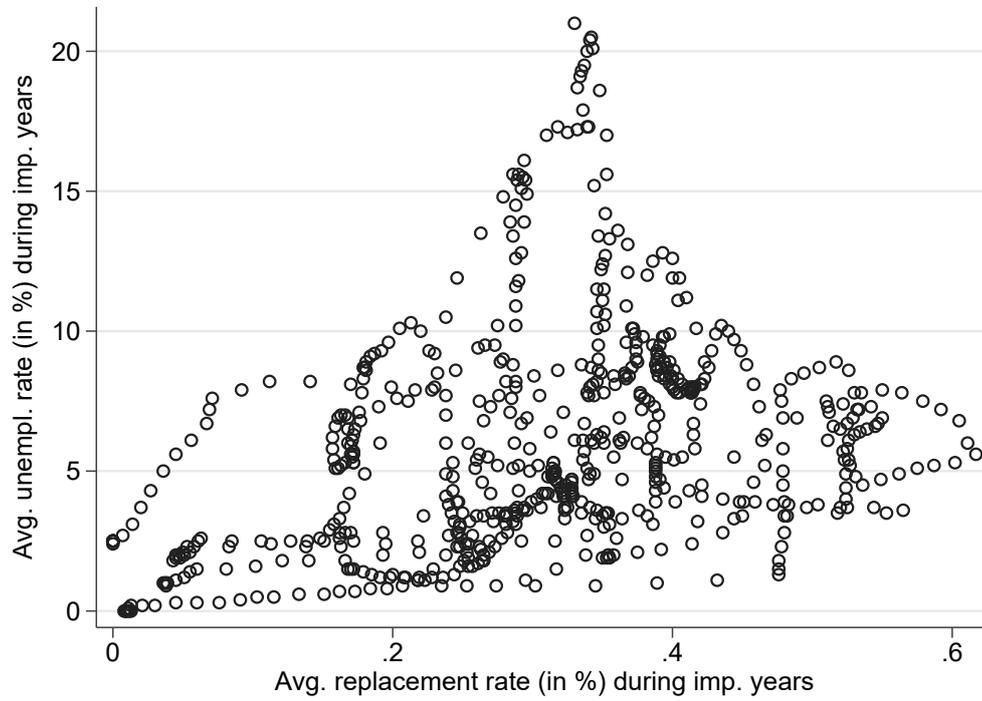
Figure A3: Mean replacement rates in Europe and the US



Note: The figure shows average replacement rates including 90 % confidence intervals for the period considered in our study (i.e., between 1961 and 2017) for all thirteen countries in our sample from the European Social Survey in contrast to the US average ($\bar{x}_{US} = 0.139$) for the same period. The horizontal line indicates the mean across all European countries ($\bar{x}_{ESS} = 0.299$).

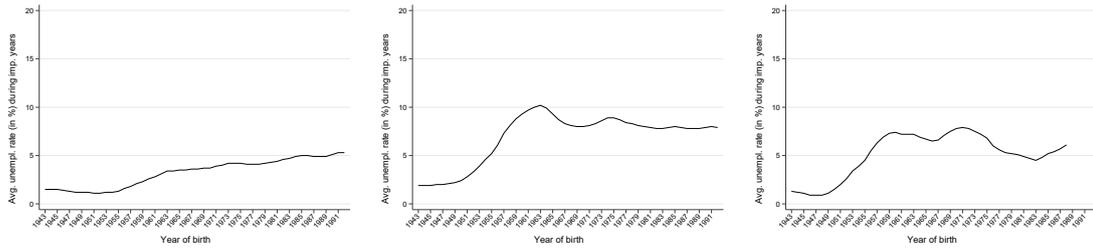
A.2.3 Details on Macroeconomic Conditions during the Impressionable Years

Figure A4: Scatter plot of average unemployment rates and replacement rates during the impressionable years



Note: The figure shows the relationship between experienced unemployment rates between the age of 18 and 25 and experienced unemployment benefits during the same period.

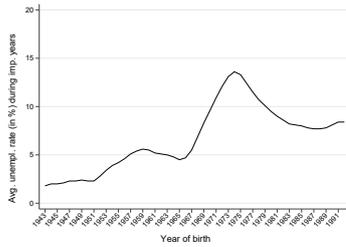
Figure A5: Average unemployment by year of birth and country



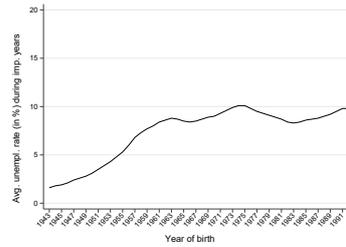
(a) Austria

(b) Belgium

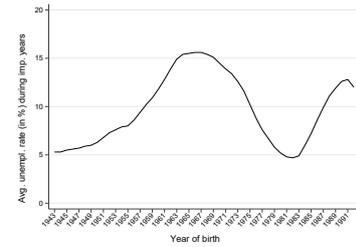
(c) Denmark



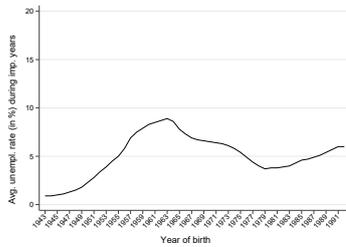
(d) Finland



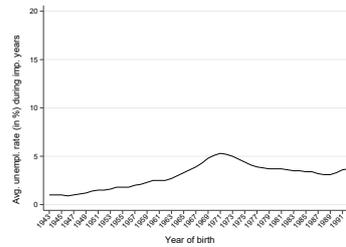
(e) France



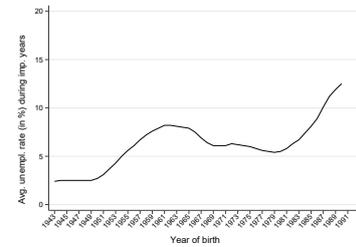
(f) Ireland



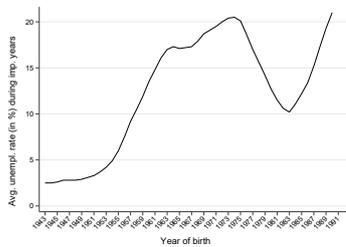
(g) Netherlands



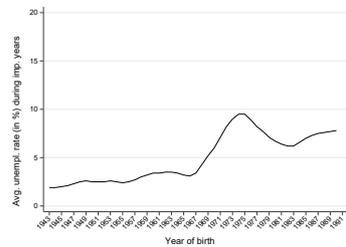
(h) Norway



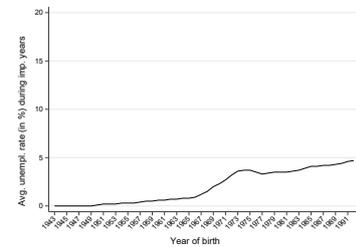
(i) Portugal



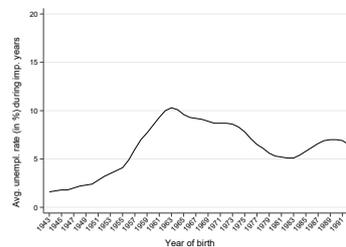
(j) Spain



(k) Sweden



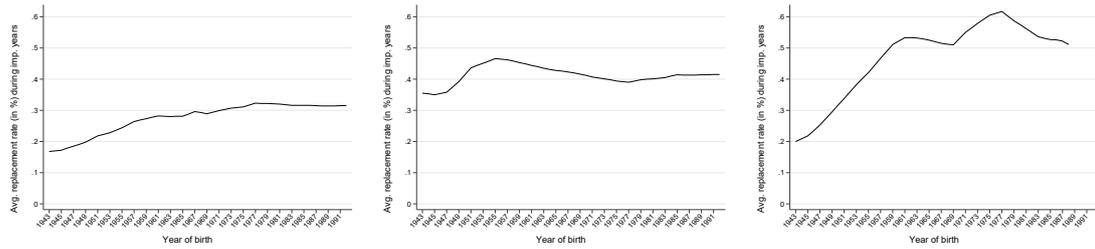
(l) Switzerland



(m) UK

Note: The figures display the average unemployment rates experienced during the impressionable years by year of birth for all countries in the sample.

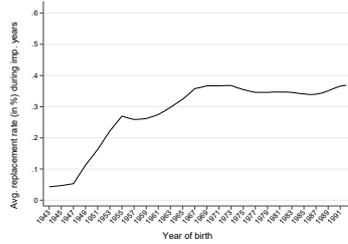
Figure A6: Average unemployment benefits by year of birth and country



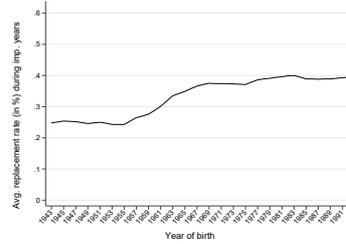
(a) Austria

(b) Belgium

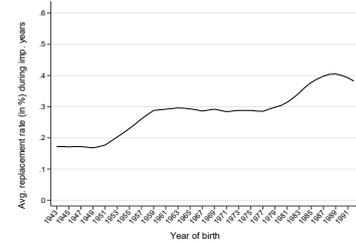
(c) Denmark



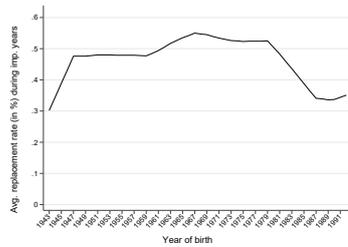
(d) Finland



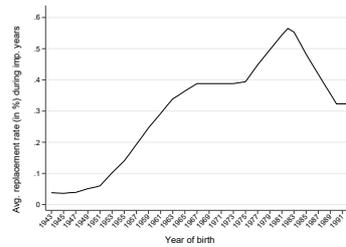
(e) France



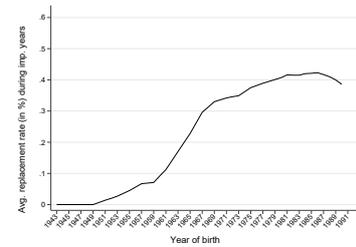
(f) Ireland



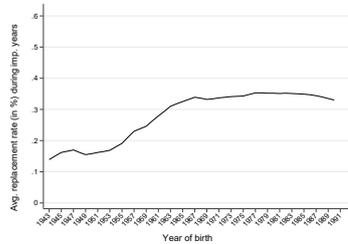
(g) Netherlands



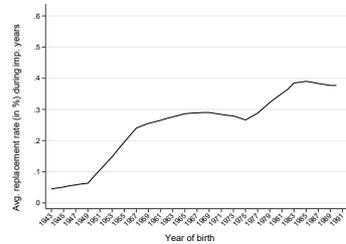
(h) Norway



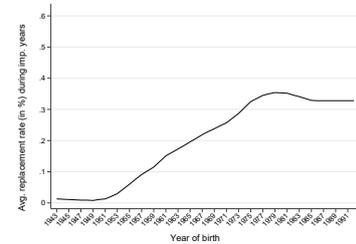
(i) Portugal



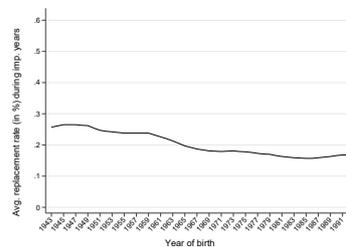
(j) Spain



(k) Sweden



(l) Switzerland



(m) UK

Note: The figures display the average unemployment replacement rates experienced during the impressionable years by year of birth for all countries in the sample.

Figure A7: Average GDP growth rate by year of birth and country



(a) Austria



(b) Belgium



(c) Denmark



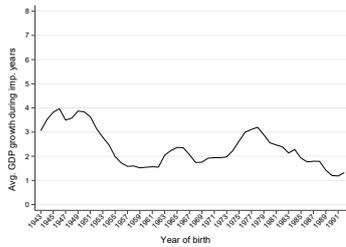
(d) Finland



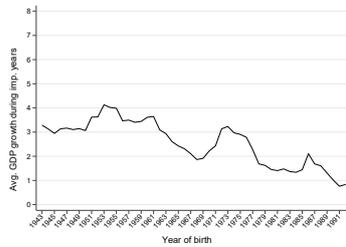
(e) France



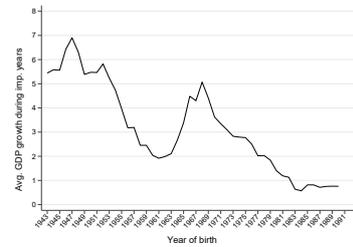
(f) Ireland



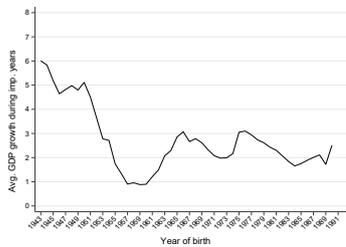
(g) Netherlands



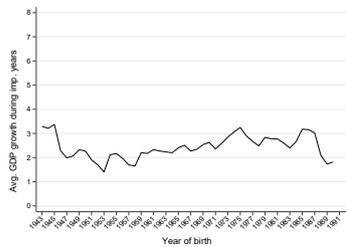
(h) Norway



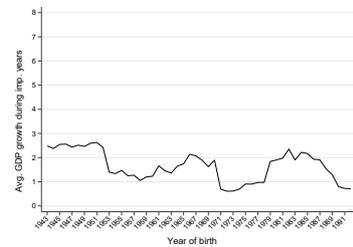
(i) Portugal



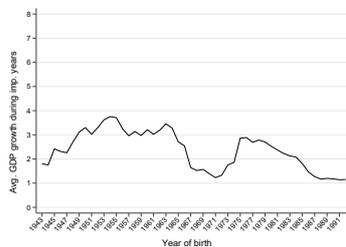
(j) Spain



(k) Sweden



(l) Switzerland

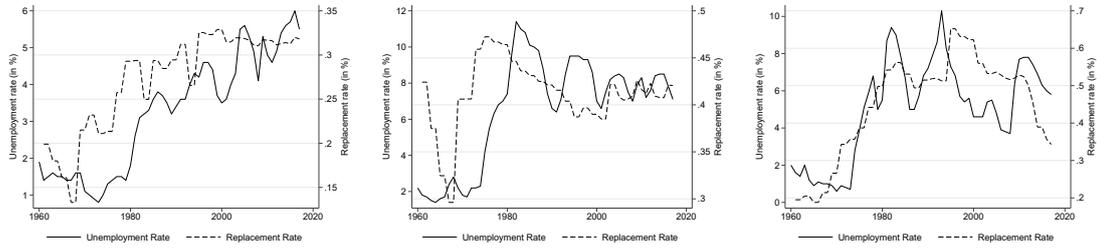


(m) UK

Note: The figures display the average GDP growth rate experienced during the impressionable years by year of birth for all countries in the sample.

A.2.4 Interdependencies between the Explanatory Variables

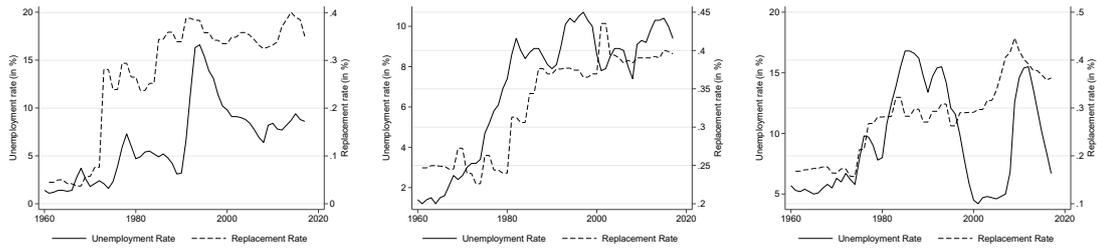
Figure A8: Unemployment rates and unemployment benefits over time by country



(a) Austria

(b) Belgium

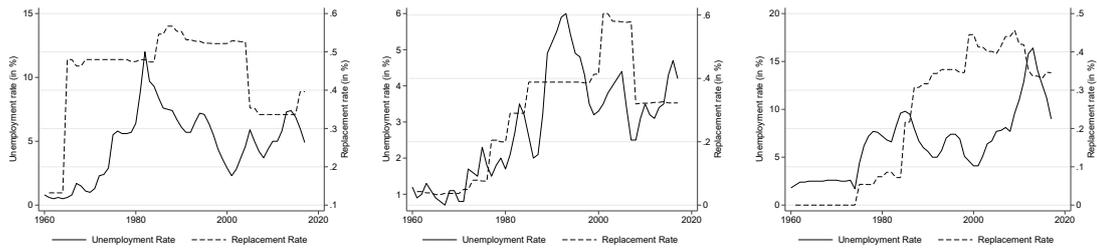
(c) Denmark



(d) Finland

(e) France

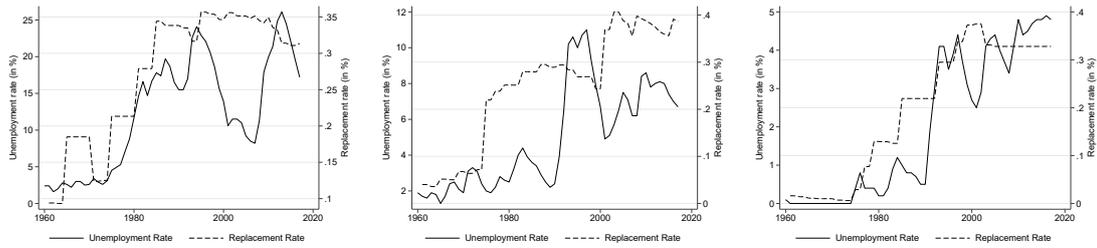
(f) Ireland



(g) Netherlands

(h) Norway

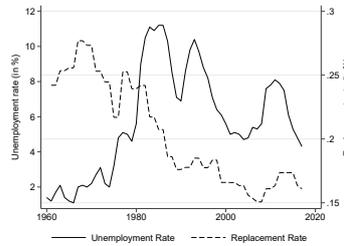
(i) Portugal



(j) Spain

(k) Sweden

(l) Switzerland



(m) UK

Note: The figures depict the development of the unemployment rate and the average replacement rate over time for each country in our sample.

Table A2: Lagged correlations between replacement rate and changes in unemployment rate

	Replacement Rate												
	AT	BE	DK	FI	FR	IRE	NL	NO	PT	ES	SWE	CH	UK
Δ in UR_{t-1}	0.017 (0.013)	0.008 (0.007)	-0.012 (0.014)	0.002 (0.016)	-0.034** (0.013)	0.006 (0.011)	-0.012 (0.012)	-0.045 (0.051)	-0.010 (0.030)	-0.003 (0.005)	-0.005 (0.018)	0.023 (0.037)	0.012* (0.007)
Δ in UR_{t-2}	0.011 (0.016)	0.003 (0.008)	-0.001 (0.016)	0.001 (0.022)	-0.015 (0.014)	0.001 (0.013)	-0.017 (0.015)	0.018 (0.054)	-0.007 (0.033)	-0.001 (0.006)	-0.007 (0.024)	0.029 (0.044)	0.003 (0.009)
Δ in UR_{t-3}	0.011 (0.017)	0.005 (0.008)	0.001 (0.015)	0.004 (0.023)	-0.028* (0.015)	0.005 (0.012)	-0.012 (0.015)	-0.025 (0.056)	-0.011 (0.030)	0.000 (0.006)	-0.012 (0.025)	0.035 (0.049)	0.009 (0.009)
Δ in UR_{t-4}	0.020 (0.017)	0.001 (0.008)	0.001 (0.016)	-0.009 (0.021)	-0.014 (0.017)	-0.003 (0.012)	-0.010 (0.013)	-0.002 (0.056)	0.006 (0.031)	-0.000 (0.005)	-0.001 (0.021)	0.035 (0.050)	0.001 (0.008)
Δ in UR_{t-5}	0.020 (0.016)	0.007 (0.007)	-0.006 (0.016)	0.002 (0.020)	-0.018 (0.018)	0.005 (0.011)	-0.006 (0.012)	-0.025 (0.055)	0.003 (0.034)	0.000 (0.005)	-0.010 (0.021)	0.040 (0.042)	0.005 (0.008)
Δ in UR_{t-6}	0.012 (0.015)	-0.002 (0.006)	-0.002 (0.015)	-0.001 (0.017)	-0.010 (0.018)	0.001 (0.010)	-0.003 (0.011)	-0.013 (0.047)	-0.009 (0.037)	-0.001 (0.005)	-0.006 (0.019)	0.025 (0.046)	0.004 (0.008)
Δ in UR_{t-7}	0.026 (0.018)	0.011* (0.005)	0.008 (0.015)	-0.003 (0.010)	-0.006 (0.015)	0.003 (0.008)	0.004 (0.011)	-0.035 (0.047)	-0.020 (0.031)	0.000 (0.004)	-0.010 (0.017)	0.068 (0.048)	0.004 (0.005)
Observations	50	50	50	50	50	50	50	50	50	50	50	50	50

Note: The table shows the lagged correlations between unemployment benefits and the unemployment rate, regressing the average replacement rate measure on the change in the unemployment rate in the preceding seven years: $smbc_t = \sum_{i=1}^7 \Delta UR_{t-i} + \varepsilon_t$ separately for each country: AT: Austria; BE: Belgium; DK: Denmark; FI: Finland; FR: France; IRE: Ireland; NL: Netherlands; NO: Norway; PT: Portugal; ES: Spain; SWE: Sweden; CH: Switzerland; UK: United Kingdom. Robust standard errors are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B Additional Results

B.1 Descriptive Statistics

Table B1: Descriptive statistics

	Mean	Std. Dev	Min	Max	N
Support for Redistribution	3.77	1.06	1	5	118978
Left-Right Scale Placement	4.94	2.05	0	10	111299
Avg. UR during imp. yrs	0.06	0.04	0	0	120026
Avg. UI growth during imp. yrs	0.29	0.14	0	1	120026
Avg. ^a GDP growth during imp. yrs	2.69	1.17	1	7	120026
Party voted for (left-right)	4.51	1.84	0	9	67919
Age	47.21	12.18	26	75	120026
Year of Birth	1962.80	12.02	1943	1992	120026
Female	0.52	0.50	0	1	120026
Unemployed	0.06	0.24	0	1	120026
Married	0.59	0.49	0	1	120026
HH-Size	2.65	1.23	1	5	120026
Religious denomination					
<i>No Religion</i>	0.45	0.50	0	1	120026
<i>Catholic</i>	0.32	0.47	0	1	120026
<i>Protestant</i>	0.19	0.39	0	1	120026
<i>Muslim</i>	0.00	0.07	0	1	120026
<i>Orthodox</i>	0.00	0.03	0	1	120026
<i>Other</i>	0.02	0.13	0	1	120026
<i>Missing</i>	0.02	0.15	0	1	120026
HH-Income					
<i>Decile 1</i>	0.05	0.23	0	1	120026
<i>Decile 2</i>	0.07	0.25	0	1	120026
<i>Decile 3</i>	0.07	0.26	0	1	120026
<i>Decile 4</i>	0.08	0.28			120026
<i>Decile 5</i>	0.09	0.29	0	1	120026
<i>Decile 6</i>	0.09	0.29	0	1	120026
<i>Decile 7</i>	0.10	0.30	0	1	120026
<i>Decile 8</i>	0.10	0.30	0	1	120026
<i>Decile 9</i>	0.09	0.29	0	1	120026
<i>Decile 10</i>	0.09	0.29	0	1	120026
<i>Missing</i>	0.15	0.36	0	1	120026
Education					
<i>ISCED I</i>	0.12	0.32	0	1	120026
<i>ISCED II</i>	0.26	0.44	0	1	120026
<i>ISCED III</i>	0.23	0.42	0	1	120026
<i>ISCED IV</i>	0.10	0.30	0	1	120026
<i>ISCED V</i>	0.29	0.46	0	1	120026
<i>Missing</i>	0.00	0.00	0	0	120026
Experienced unemployment in the past	0.13	0.34	0	1	120026
Migration background	0.07	0.26	0	1	120026

Note: a: Geometric average

B.2 Individual Control Variables

Table B2: Individual Control Variables

	Support for Redistribution			Left-Right Scale Placement		
	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.174*** (0.007)	0.174*** (0.007)	0.174*** (0.007)	0.251*** (0.016)	0.251*** (0.016)	0.250*** (0.016)
Unemployed	0.039*** (0.014)	0.039*** (0.014)	0.039*** (0.014)	0.182*** (0.032)	0.182*** (0.032)	0.180*** (0.032)
Married	-0.060*** (0.008)	-0.060*** (0.008)	-0.060*** (0.008)	-0.150*** (0.017)	-0.150*** (0.017)	-0.151*** (0.017)
Past Unemployment	0.133*** (0.010)	0.133*** (0.010)	0.132*** (0.010)	0.274*** (0.022)	0.275*** (0.022)	0.274*** (0.022)
Migration Background	0.009 (0.013)	0.009 (0.013)	0.009 (0.013)	0.147*** (0.026)	0.147*** (0.026)	0.146*** (0.026)
Household Size	<i>Reference Category: Single Household</i>					
2	0.085*** (0.010)	0.084*** (0.010)	0.085*** (0.010)	0.090*** (0.022)	0.089*** (0.022)	0.090*** (0.022)
3	0.116*** (0.012)	0.116*** (0.012)	0.116*** (0.012)	0.100*** (0.026)	0.102*** (0.026)	0.102*** (0.026)
4	0.101*** (0.012)	0.102*** (0.012)	0.102*** (0.012)	0.084*** (0.027)	0.087*** (0.027)	0.086*** (0.027)
5 or more	0.107*** (0.015)	0.108*** (0.015)	0.108*** (0.015)	0.004 (0.031)	0.007 (0.032)	0.006 (0.032)
Religious Denomination	<i>Reference Category: No religion</i>					
Catholic	-0.092*** (0.010)	-0.092*** (0.010)	-0.092*** (0.010)	-0.659*** (0.025)	-0.659*** (0.025)	-0.659*** (0.025)
Protestant	-0.108*** (0.009)	-0.108*** (0.009)	-0.108*** (0.009)	-0.589*** (0.023)	-0.589*** (0.023)	-0.590*** (0.023)
Muslim	0.024 (0.051)	0.023 (0.051)	0.023 (0.051)	0.419*** (0.108)	0.416*** (0.108)	0.417*** (0.108)
Orthodox	-0.124 (0.093)	-0.124 (0.093)	-0.122 (0.093)	-0.485** (0.190)	-0.486** (0.190)	-0.481** (0.190)
Other	-0.062** (0.025)	-0.062** (0.025)	-0.062** (0.025)	-0.197*** (0.052)	-0.196*** (0.052)	-0.197*** (0.052)
Religion missing	-0.081*** (0.029)	-0.081*** (0.029)	-0.080*** (0.029)	-0.136** (0.062)	-0.136** (0.062)	-0.134** (0.062)

(continued on next page)

Table B2: Individual Control Variables - contd.

	Support for Redistribution			Left-Right Scale Placement		
	(1)	(2)	(3)	(4)	(5)	(6)
Household income deciles						
Decile 1	0.021 (0.018)	0.021 (0.018)	0.021 (0.018)	0.115*** (0.042)	0.115*** (0.042)	0.115*** (0.042)
Decile 2	0.062*** (0.015)	0.062*** (0.015)	0.062*** (0.015)	0.118*** (0.035)	0.117*** (0.035)	0.117*** (0.035)
Decile 3	0.038*** (0.014)	0.037*** (0.014)	0.038*** (0.014)	0.107*** (0.032)	0.106*** (0.032)	0.107*** (0.032)
<i>Reference Category: Decile 4</i>						
Decile 5	-0.040*** (0.014)	-0.040*** (0.014)	-0.040*** (0.014)	0.051* (0.030)	0.051* (0.030)	0.050* (0.030)
Decile 6	-0.059*** (0.014)	-0.059*** (0.014)	-0.059*** (0.014)	0.035 (0.030)	0.035 (0.030)	0.034 (0.030)
Decile 7	-0.110*** (0.013)	-0.110*** (0.013)	-0.111*** (0.013)	0.004 (0.030)	0.005 (0.030)	0.003 (0.030)
Decile 8	-0.198*** (0.015)	-0.198*** (0.015)	-0.198*** (0.015)	-0.099*** (0.030)	-0.098*** (0.030)	-0.100*** (0.030)
Decile 9	-0.282*** (0.015)	-0.282*** (0.015)	-0.283*** (0.015)	-0.198*** (0.032)	-0.197*** (0.032)	-0.199*** (0.032)
Decile 10	-0.506*** (0.017)	-0.506*** (0.017)	-0.506*** (0.017)	-0.493*** (0.034)	-0.491*** (0.034)	-0.494*** (0.034)
Income missing	-0.191*** (0.015)	-0.191*** (0.015)	-0.191*** (0.015)	-0.187*** (0.031)	-0.187*** (0.031)	-0.187*** (0.031)
<i>Reference Category: ES-ISCED I</i>						
ES-ISCED II	0.006 (0.012)	0.006 (0.012)	0.005 (0.012)	-0.166*** (0.029)	-0.165*** (0.029)	-0.170*** (0.030)
ES-ISCED III	-0.044*** (0.014)	-0.044*** (0.014)	-0.045*** (0.014)	-0.050* (0.030)	-0.049 (0.030)	-0.054* (0.030)
ES-ISCED IV	-0.122*** (0.016)	-0.121*** (0.016)	-0.123*** (0.016)	-0.105*** (0.036)	-0.103*** (0.036)	-0.108*** (0.036)
ES-ISCED V	-0.167*** (0.014)	-0.167*** (0.014)	-0.168*** (0.014)	0.189*** (0.033)	0.190*** (0.033)	0.186*** (0.033)
Country-Year FE	✓	✓	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓	✓	✓
Observations	118978	118978	118978	111299	111299	111299
R-squared	0.1374	0.1374	0.1375	0.0679	0.0679	0.0681

Note: The table shows the control variables from Table 1. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

B.3 Sensitivity Analyses

Excluding observations with missing information on religion or household income

Table B3: Average unemployment and benefit generosity during the impressionable years and political attitudes - Excluding observations with missing information on religious denomination and household income

	Support for Redistribution			Left-Right Scale Placement		
	(1)	(2)	(3)	(4)	(5)	(6)
Avg. UR in imp. yrs (18-25)	-0.289*	-0.256	1.406***	-0.144	0.007	3.602***
	(0.150)	(0.158)	(0.497)	(0.360)	(0.386)	(1.238)
Avg. UI in imp. yrs (18-25)		-0.067	0.161		-0.294	0.182
		(0.096)	(0.116)		(0.229)	(0.280)
Avg. UR \times Avg. UI in imp. yrs (18-25)			-5.140***			-11.013***
			(1.454)			(3.569)
Individual Controls	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓	✓	✓
Observations	98,985	98,985	98,985	94,356	94,356	94,356
R-squared	0.1392	0.1392	0.1393	0.0706	0.0706	0.0707

Note: The table shows the estimated effects of average unemployment, average unemployment benefits and their interaction during the impressionable years on preferences for redistribution (column 1-3) and left-right scale placement (column 4-6), excluding all individuals with missing data on either their religious denomination and/or their household income, using OLS. Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Reduced Data Frame

While our procedure of combining the historical gross replacement rate, which are based on average production worker wages, with the new replacement rates, that are based on average worker wages, relies on a standard index-linking approach, we last show our results using the historical replacement rates data only. Table B4 provides the results for our main analysis for the restricted data frame, including only cohorts born between 1943 and 1980 (as the replacement rates data only reaches from 1961 to 2005; for details, see Section 3.2 and Section A.2.1 in the Appendix). Apart from the partial negative correlation between the exposure to higher unemployment rates being statistically insignificant now in column 1, we find very similar results for the interaction effects in columns 3 and 6, alleviating the concern that our results are driven by a structural break in the data series.

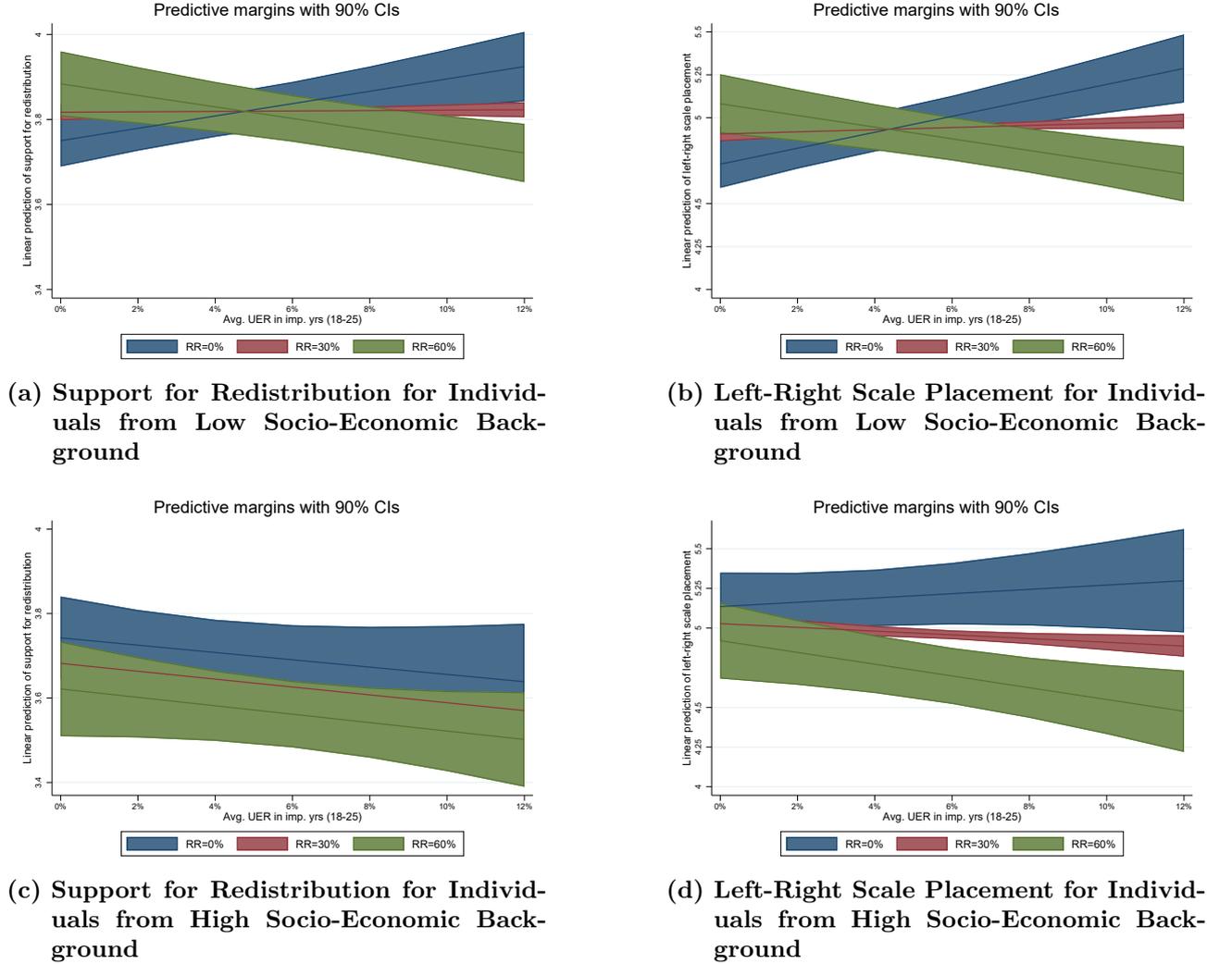
Table B4: Average unemployment and benefit generosity during the impressionable years and political attitudes (reduced sample)

	Support for Redistribution			Left-Right Scale Placement		
	(1)	(2)	(3)	(4)	(5)	(6)
Avg. UR in imp. yrs (18-25)	-0.239 (0.160)	-0.233 (0.164)	1.311*** (0.494)	0.114 (0.360)	0.192 (0.379)	5.751*** (1.301)
Avg. UI in imp. yrs (18-25)		-0.018 (0.116)	0.208 (0.134)		-0.241 (0.283)	0.510 (0.328)
Avg. UR \times Avg. UI in imp. yrs (18-25)			-4.870*** (1.465)			-17.238*** (3.846)
Individual Controls	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓	✓	✓
Observations	109,297	109,297	109,297	102,289	102,289	102,289
<i>R</i> -squared	0.1393	0.1393	0.1394	0.0660	0.0660	0.0664

Note: The table shows the estimated effects of the joint experience of average unemployment and average unemployment benefits during the impressionable years on support for redistribution (columns 1-3) and left-right scale placement (columns 4-6) using OLS. Through the restriction of the dataset to the original historical replacement rates, the sample is constrained to cohorts born between 1943 and 1980. Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B.4 Mechanism: Personal Experience

Figure B1: Political attitudes and the joint experience of unemployment and unemployment benefits during the impressionable years by socio-economic background



Note: The figures show linear predictions of support for redistribution (panel B1a for individuals with low socio-economic background and panel B1c for individuals with high socio-economic background) and left-right political orientation (panel B1b for low, respectively panel B1d for high socio-economic background) with 90% confidence intervals. The predictions are for different average rates of experienced unemployment, i.e., 0% to 12% and three different regimes of unemployment insurance generosity, i.e. a minimum (0%), mean (30%) and maximum (60%) benefit replacement rate (RR), based on the OLS regressions in Table 2.

Own Education

Table B5: Average unemployment and benefit generosity during the impressionable years and political attitudes for different levels of education

Level of Education	Support for Redistribution		Left-Right Scale Placement	
	Low	High	Low	High
Avg. UR in imp. yrs (18-25)	1.299** (0.527)	-0.715 (0.814)	4.346*** (1.446)	0.129 (1.588)
Avg. UI in imp. yrs (18-25)	0.049 (0.137)	-0.275 (0.202)	0.177 (0.345)	-0.419 (0.361)
Avg. UR × Avg. UI in imp. yrs (18-25)	-4.223*** (1.628)	-0.482 (2.509)	-13.001*** (4.377)	-5.058 (4.786)
Individual Controls	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓
Observations	72,258	46,720	66,100	45,199
<i>R</i> -squared	0.0981	0.0763	0.0282	0.0495

Note: The table shows the estimated effects of the joint experience of average unemployment and average unemployment benefits during the impressionable years on support for redistribution (columns 1-2) and left-right scale placement (columns 3-4) for two different levels of education using OLS. Low education refers to individuals who have at most upper secondary education (ISCED 1-3); high education refers to individuals with at least post-secondary education (ISCED 4-5). Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Different Cut-off - Socio-Economic Background

Table B6: Average unemployment and benefit generosity during the impressionable years and political attitudes for different socio-economic backgrounds

Socio-Economic Background	Support for Redistribution		Left-Right Scale Placement	
	Low	Very High	Low	Very High
Avg. UR in imp. yrs (18-25)	1.425*** (0.502)	-0.959 (0.874)	4.831*** (1.231)	0.602 (2.070)
Avg. UI in imp. yrs (18-25)	0.230* (0.129)	-0.263 (0.210)	0.540* (0.300)	-0.302 (0.458)
Avg. UR × Avg. UI in imp. yrs (18-25)	-4.638*** (1.515)	0.027 (2.644)	-13.695*** (3.667)	-7.237 (6.181)
Individual Controls	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓
Observations	90,704	28,274	84,737	26,562
R-squared	0.1354	0.1369	0.0659	0.0908

Note: The table shows the estimated effects of the joint experience of average unemployment and average unemployment benefits during the impressionable years on support for redistribution (columns 1-2) and left-right scale placement (columns 3-4) for two different types of socio-economic backgrounds using OLS. Here, low socio-economic background refers to individuals whose father have less than tertiary education (ISCED 1-4); very high socio-economic background refers to individuals with fathers with at least tertiary education (\geq ISCED 5). Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Different Cut-off - Own Education

Table B7: Average unemployment and benefit generosity during the impressionable years and political attitudes for different socio-economic backgrounds

Level of Education	Support for Redistribution		Left-Right Scale Placement	
	Low	Very High	Low	Very High
Avg. UR in imp. yrs (18-25)	0.843* (0.502)	-0.818 (0.948)	3.196** (1.323)	0.867 (1.795)
Avg. UI in imp. yrs (18-25)	-0.073 (0.124)	-0.318 (0.225)	-0.146 (0.319)	-0.196 (0.412)
Avg. UR × Avg. UI in imp. yrs (18-25)	-3.221** (1.523)	-0.718 (2.824)	-9.937** (3.979)	-7.475 (5.397)
Individual Controls	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓
Observations	83,863	35,115	77,186	34,113
R-squared	0.0954	0.0716	0.0306	0.0539

Note: The table shows the estimated effects of the joint experience of average unemployment and average unemployment benefits during the impressionable years on support for redistribution (columns 1-2) and left-right scale placement (columns 3-4) for two different levels of education using OLS. Here, low education refers to individuals who have less than tertiary education (ISCED 1-4); very high education refers to individuals with at least tertiary education (\geq ISCED 5). Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

B.5 Further Robustness Tests

Voting Behavior

Table B8 shows the results with self-reported voting behavior for our main specification. Qualitatively, we find very similar results to our main analyses, though the effects are not statistically significant on conventional levels. A similar pattern was found in empirical studies before: Emmenegger, Marx and Schraff (2015) find that higher labor market disadvantages increase preferences for redistribution but are not directly related to voting. Margalit (2013) finds very similar results in the US.

Table B8: Average unemployment and benefit generosity during the impressionable years and self-reported voting behavior

	Self-Reported Voting Behavior		
	(1)	(2)	(3)
Avg. UR in imp. yrs (18-25)	-0.071 (0.347)	-0.104 (0.363)	0.568 (1.011)
Avg. UI in imp. yrs (18-25)		0.073 (0.205)	0.166 (0.259)
Avg. UR \times Avg. UI in imp. yrs (18-25)			-2.130 (3.040)
Individual Controls	✓	✓	✓
Country-Year FE	✓	✓	✓
Country-Age Trend	✓	✓	✓
Observations	67,919	67,919	67,919
<i>R</i> -squared	0.1687	0.1687	0.1687

Note: The table shows the estimated effects of average unemployment, average unemployment benefits and their interaction (column 1-3) on self-reported voting behavior (where higher values indicate more left-wing) using OLS. Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Trust in Parliament

Table B9: Unemployment and benefit generosity during the impressionable years and political attitudes - Controlling for trust in the parliament

	Support for Redistribution			Left-Right Scale Placement		
	(1)	(2)	(3)	(4)	(5)	(6)
Avg. UR in imp. yrs (18-25)	-0.317** (0.139)	-0.281* (0.146)	0.803* (0.439)	-0.207 (0.311)	-0.052 (0.332)	3.628*** (1.135)
Avg. UI in imp. yrs (18-25)		-0.078 (0.090)	0.088 (0.112)		-0.318 (0.219)	0.213 (0.271)
Avg. UR × Avg. UI in imp. yrs (18-25)			-3.445*** (1.316)			-11.543*** (3.383)
Trust in country's parliament	-0.027*** (0.002)	-0.027*** (0.002)	-0.027*** (0.002)	-0.033*** (0.004)	-0.033*** (0.004)	-0.033*** (0.004)
Individual Controls	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓	✓	✓
Observations	117,689	117,689	117,689	110,447	110,447	110,447
R-squared	0.1403	0.1403	0.1404	0.0695	0.0696	0.0697

Note: The table shows the estimated effects of average unemployment, average unemployment benefits and their interaction during the impressionable years on support for redistribution (columns 1-3) and left-right scale placement (columns 4-6) using OLS, additionally controlling for individuals' trust in the country's parliament. Trust in the country's parliament is measured asking respondents "How much do you personally trust [country]'s parliament? 0 means you do not trust the institution at all, and 10 means you have complete trust." Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Other Age Categories

In our main analysis, we focus on the macroeconomic conditions and the social safety net during an individual's impressionable years between the age of 18 and 25. In this section, we explore whether experiences during other phases of life (involving age intervals with the same number of years) surrounding the impressionable years (i.e., ages 10-17; 26-33; 34-41) influence people's support for redistribution, respectively their self-positioning on the left-right scale, in a similar manner.

The results for alternative age ranges are presented in the upper part of Table B10. Due to our identification strategy and the rather short time frame for which relevant data is available, we cannot hold the sample constant for the analysis of these age ranges: When analyzing the effects of conditions between the age of 10-17, we can only consider cohorts from 1951 to 1986 (compared to 1943-1992 in the main analysis with the age range 18-25 for the impressionable years), for conditions between 26-33 only cohorts from 1943-1984 and for conditions between the age of 34-41 only cohorts from 1943-1976. The definition of alternative age ranges also implies that different time frames and therewith conditions of the macroeconomy and the social safety net are considered in the additional estimations. Whereas we consider the state of the macroeconomy between 1961 and 2017 when assessing the effects of experiences during the impressionable years, we can, for example, only take macroeconomic data between 1977 and 2017 into account when studying the experiences between 34-41. We present all the results for the other age categories surrounding the impressionable years using our main specification and additionally with cohort and generation fixed effects. Overall, we observe that the personal exposure to adverse macroeconomic conditions is not robustly related to the support of redistribution later on in life other than during the age period that has been proposed as particularly important for the formation of people's beliefs about their environment. The same holds largely with regard to the imprinting of the political orientation on a left-right spectrum.

Table B10: Average unemployment and benefit generosity at ages surrounding the impressionable years and political attitudes

	Support for Redistribution				Left-Right Scale Placement			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Avg. UR b/w age 10-17	-1.276** (0.581)	2.773*** (0.520)	-0.472 (0.703)	-1.861** (0.745)	-4.416*** (1.412)	3.730*** (1.183)	-1.378 (1.759)	-6.074*** (1.841)
Avg. UI b/w age 10-17	-0.395*** (0.130)	0.091 (0.082)	-0.140 (0.157)	-0.170 (0.184)	-1.998*** (0.351)	-0.436** (0.194)	-1.837*** (0.490)	-1.312** (0.532)
Avg. UR × Avg. UI b/w age 10-17	1.971 (1.607)	-6.704*** (1.320)	0.142 (1.907)	2.726 (2.140)	12.150*** (4.085)	-6.893** (3.061)	4.619 (5.256)	13.894*** (5.090)
Observations	95,500	95,500	95,500	95,500	89,241	89,241	89,241	89,241
R-squared	0.1413	0.1408	0.1419	0.1419	0.0736	0.0739	0.0745	0.0749
Avg. UR b/w age 18-25	0.893** (0.436)	2.295*** (0.501)	1.266* (0.684)	2.038*** (0.767)	3.956*** (1.137)	2.837*** (0.978)	9.083*** (1.782)	8.447*** (1.971)
Avg. UI b/w age 18-25	0.084 (0.112)	0.130 (0.080)	0.359** (0.140)	0.352** (0.161)	0.244 (0.271)	-0.295** (0.149)	1.385*** (0.358)	0.829** (0.386)
Avg. UR × Avg. UI b/w age 18-25	-3.602*** (1.312)	-5.582*** (1.306)	-3.978** (1.920)	-7.029*** (2.401)	-12.384*** (3.397)	-6.414*** (2.473)	-27.245*** (5.126)	-27.982*** (5.995)
Observations	118,978	118,978	118,978	118,978	111,299	111,299	111,299	111,299
R-squared	0.1375	0.1365	0.1380	0.1381	0.0681	0.0695	0.0690	0.0697
Avg UR b/w age 26-33	-0.240 (0.558)	-0.824 (0.578)	-0.109 (0.610)	0.368 (0.780)	2.090 (1.430)	-2.583** (1.216)	1.684 (1.693)	4.285** (2.039)
Avg. UI b/w age 26-33	0.113 (0.156)	-0.035 (0.110)	0.363** (0.173)	0.367* (0.208)	1.496*** (0.395)	-0.405* (0.216)	2.489*** (0.473)	2.260*** (0.477)
Avg. UR × Avg. UI b/w age 26-33	0.870 (1.692)	1.958 (1.604)	1.526 (1.771)	-1.832 (2.328)	-3.665 (4.481)	6.168* (3.383)	-0.115 (5.077)	-12.636** (6.103)
Observations	99,537	99,537	99,537	99,537	93,349	93,349	93,349	93,349
R-squared	0.1382	0.1378	0.1390	0.1390	0.0659	0.0671	0.0672	0.0672
Avg. UR b/w age 34-41	2.177* (1.198)	-2.688*** (0.724)	3.385** (1.616)	1.646 (1.443)	2.976 (2.530)	-6.194*** (1.361)	7.201** (3.120)	3.012 (2.861)
Avg. UI b/w age 34-41	0.317 (0.266)	-0.364** (0.178)	0.726** (0.315)	-0.087 (0.350)	1.215** (0.556)	-0.824*** (0.308)	2.107*** (0.606)	1.102 (0.728)
Avg. UR × Avg. UI b/w age 34-41	-3.876 (3.565)	7.967*** (2.241)	-7.530 (4.711)	-1.165 (4.323)	-0.008 (7.236)	16.823*** (3.990)	-11.516 (8.804)	3.425 (8.348)
Observations	75,937	75,937	75,937	75,937	71,448	71,448	71,448	71,448
R-squared	0.1342	0.1341	0.1349	0.1349	0.0623	0.0638	0.0630	0.0635
Individual Controls	✓	✓	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Age Trend	✓		✓	✓	✓		✓	✓
Cohort FE		✓				✓		
Country-Generation Group FE (1)			✓				✓	
Country-Generation Group FE (2)				✓				✓

Note: The table shows the estimated effects of average unemployment, average unemployment benefits and their interaction during other same-interval age categories surrounding the impressionable years (i.e., age 10-17; 26-33; 34-41) on support for redistribution (columns 1-4) and left-right scale placement (columns 5-8) using OLS, additionally controlling for cohort fixed effects (in column 2 and 6) and two different specifications of country-specific generation group fixed effects. Country-Generation Group FE (1) in columns 3 and 7 uses country-specific dummy variables for three different generations in each country: 1943-1957, 1958-1972, 1973-1992. Country-Generation Group FE (2) in columns 4 and 8 uses dummy variables for four different generations in each country: 1943-1955, 1956-1967, 1968-1979 and 1980-1992. Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Non-Linear Specification

Table B11: Average unemployment and benefit generosity during the impressionable years and political attitudes (non-linear specification)

	Support for Redistribution		Left-Right Scale Placement	
	(1)	(2)	(3)	(4)
Avg. UR in imp. yrs (18-25)	0.893** (0.436)	2.559* (1.498)	3.956*** (1.137)	9.284** (3.984)
Avg. UI in imp. yrs (18-25)	0.084 (0.112)	0.148 (0.136)	0.244 (0.271)	0.235 (0.332)
Avg. UR \times Avg. UI in imp. yrs (18-25)	-3.602*** (1.312)	-7.601* (4.314)	-12.384*** (3.397)	-18.686* (11.308)
Avg. UR in imp. yrs (18-25) ²		-13.591 (12.330)		-38.066 (30.744)
Avg. UR ² \times Avg. UI in imp. yrs (18-25)		36.296 (37.200)		62.680 (91.825)
Individual Controls	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓
Country-Age Trend	✓	✓	✓	✓
Observations	118,978	118,978	111,299	111,299
<i>R</i> -squared	0.1375	0.1375	0.0681	0.0683

Note: The table shows the estimated effects of the joint experience of average unemployment (and its quadratic term) and average unemployment benefits during the impressionable years on support for redistribution (columns 1-3) and left-right scale placement (columns 4-6) using OLS. Standard errors are two-way clustered by country and year of birth and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.