Growing Up in a Recession[1]

September 2012

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Abstract

Does the historical macroeconomic environment affect preferences for redistribution? We find that individuals who experienced a recession when young believe that success in life depends more on luck than effort, support more government redistribution and tend to vote for left parties. The effect of recessions on beliefs is long-lasting. Our findings are supported using evidence from three different datasets. First, we identify the effect of recessions on beliefs exploiting time and regional variation in macroeconomic conditions using data from the 1972-2010 General Social Survey. Our specifications control for non-linear time-period, life-cycle and cohort-effects as well as a host of background variables. Second, we rely on data from the National Longitudinal Survey of the High School Class of 1972 (NLS72) to corroborate the age-period-cohort specification and look at heterogeneous effects of experiencing a recession during early adulthood. Finally, our findings are also confirmed with a sample of 37 countries whose citizens experienced macroeconomic disasters at different points in history, using data from the World Value Survey.

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1. Introduction

Preferences for redistribution are at the foundation of political economy and vary in systematic ways across countries.[2] Societies that prefer an equal distribution of income choose larger and more redistributive governments; societies that are less concerned about inequality choose smaller and less redistributive governments. For example, differences in preferences for redistribution can explain why Europe and the US are so different in terms of government intervention in the production and distribution of income.[3]

Despite the crucial role of preferences for redistribution in explaining institutional outcomes, little empirical work has been done on how these preferences are formed and how and why they change over time.[4] Are individual preferences for redistribution exogenous? Or is it possible that living under a specific macroeconomic environment leads to adaptation of preferences? This paper covers this gap by investigating whether the experience of a recession during youth permanently changes preferences for redistribution.[5] Historical examples of the relevance of macroeconomic shocks on the determination of attitudes toward the state, and ultimately different welfare systems, abound. The national welfare system established after the Great Depression was a radical break from the strong sense of individualism and self-reliance characterizing American society. Several countries in Europe also moved from partial or selective provision of social services to relatively comprehensive coverage of the population during the same period.

In this paper, we examine systematically whether individuals differ in their desire for government intervention depending on the macroeconomic history that they experience when young, a question not yet addressed in the literature on preferences for redistribution.[6] We do so by testing well-grounded psychological theories on the formation of political and economic beliefs. According to a vast literature in social psychology, economic and political beliefs are formed mostly during early adulthood and change slowly past this critical age. In particular, the most relevant theory

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[2] Alesina and Glaeser (2004).

[3] For different models relating preferences for redistribution and political outcomes see Piketty (1995), Alesina and Angeletos (2005), Corneo and Gruner (2002) and Benabou and Tirole (2006). For a general review of the literature on preferences for redistribution, see Alesina and Giuliano (2011).

[4] Part of the empirical literature on preferences for redistribution has emphasized the presence of systematic variation across cultures. Luttmer and Singhal (2008) show that preferences for redistribution of second generation immigrants in different European countries tend to replicate those of their countries of origin. The intuition behind this result is that beliefs and values are passed down from parents to children and they tend to persist from generation to generation. While culture is definitely important, it cannot explain why preferences for redistribution change over time.

[5] Two recent papers provide evidence that preferences for redistribution can indeed change. Alesina and Fuchs-Schündeln (2008) show that strong collective experiences, such as the communist regime that existed in Eastern Germany before 1990, were relevant for the formation of preferences for redistribution of East Germans. Di Tella, Galiani and Schargrodsky (2007), show that receiving property rights changes the beliefs that people hold.

[6] See Alesina and Giuliano (2011) for a review.

in this respect, the *impressionable years hypothesis*, states that core attitudes, beliefs, and values crystallize during a period of great mental "plasticity" in early adulthood (the so–called "impressionable years") and remain largely unaltered throughout the remaining adult years. Evidence of significant socialization has been found between 18 and 25 years of age (Krosnick and Alwin 1989).[7]

Consistent with theories of social psychology, this paper shows that large macroeconomic shocks experienced during the critical years of adolescence and early adulthood, between the ages of 18 and 25, shape preferences for redistribution and that this effect has a strong statistical and economic significance.

We prove our results by using evidence drawn from three datasets. First, relying on pooled cross-sectional data from the 1972-2010 General Social Survey (GSS), the paper uses regional variation in macroeconomic conditions in the United States to identify the impact of economic shocks on the formation of preferences for redistribution. The key challenge in any study of preference formation is the appropriate control of omitted variables: a cohort of individuals shares a large number of experiences, ranging from economic shocks to technological progress to a multitude of unobservable characteristics. This makes the identification of macroeconomic shocks almost impossible if we use only cross-time variation. For this reason, our identification strategy uses cross-regional variation in individual experiences during their critical age. Using the information on the location of respondents during adolescence, our identification relies on time and location specific shocks. This specification allows us to control for non-linear time-period, life-cycle and cohort-effects as well as a host of background variables.

Second, we confirm the findings from the US-based GSS by extending the analysis to a large set of countries. We do so by linking preferences for redistribution to experiences of economic disasters during youth in a sample of 37 countries, using evidence from the World Value Survey. Finally, we utilize data from the National Longitudinal Survey of the High School Class of 1972 (NLS72) to corroborate the age-period-cohort specification and shed light on the mechanisms driving the results.

For all our analysis we use a variety of self-reported measures of preferences for government intervention. To show that subjective measures are a good approximation of underlying behavior,

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[7] A similar theory, the *increasing persistence hypothesis,* also maintains that individuals are flexible and responsive to social circumstances when they are young, but are gradually less responsive as they age. This decrease in flexibility is due to a "decline in energy and loss of brain tissue, to disengagement and a decrease in interest in events distant from one's immediate life and to the accumulation of friends who share similar world views" (Glenn, 1980). Both hypotheses have similar predictions that belief formation happens mostly during adolescence and early adulthood and could eventually fade with age. Another hypothesis, which has received much less attention, is the *life-long openness hypothesis,* which maintains that individuals are highly flexible throughout their lives and constantly alter their attitudes in response to changing life circumstances (Brim and Kagan, 1980).

we also examine the validity of these self-reported measures by comparing them with several objective measures of political behavior, including political ideology, party affiliation and voting behavior in the last election. The similarity of our findings on voting and political behavior confirms that experiencing a recession when young affects real behavior.

Overall, we do find that experiencing a recession when young permanently increases the individual desire for redistribution. The effect is statistically significant and economically meaningful and is robust across three different datasets and for a variety of specifications. To gauge the economic significance of our findings we construct a counterfactual, using evidence from the General Social Survey, of what would have happened to the percentage of people voting for the Democratic Party in the last election in the nine different regions of the US, if individuals living in that region had not experienced a recession when young.[8] We found that the effect of having individuals living through a recession when young could explain up to 10-15% of the probability of voting for a Democratic president in some US regions.

In our empirical analysis, we also look at the presence of heterogeneous effects. Overall, we find that the effect of experiencing a recession when young is quite general and persistent, with a slightly stronger effect for African Americans, less educated and poorer people. This evidence is suggestive that at least part of the recession effect is amplified by the personal conditions of the individuals during the recession.

Why do people become more supportive of government intervention during recessions? Piketty (1995)[9] argues that shocks could change the belief that people hold about the relative importance of luck versus effort as a driver of success. This belief, in his model, is related to the amount of taxes that people vote for and their preferences for government intervention. We find evidence consistent with his theory: the uncertainty created by macroeconomic shocks makes people believe that luck is more relevant than effort and, as a result, increases their desire for government intervention. The persistent effect of macroeconomic shocks on beliefs is also consistent with Cogley and Sargent (2008). The authors find, in reference to the Great Depression, that macroeconomic shocks are "beliefs twisting events", whose influence can last for a long period, because it takes a long time to correct the pessimistic beliefs induced by the depression event through the observation of macroeconomic data. Many writers since the 1930 have indeed argued informally that the Great Depression created a "depression generation" that behaved in a way that affected the macroeconomy for decades after the depression ended. For example, Friedman and

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[8] The details of this counterfactual exercise are provided in Section 3.
[9] For a complete discussion of the model see the literature review in Section 2.

Schwartz (1963) suggested that the Great Depression "shattered" beliefs in the future of capitalism. Our findings are consistent with this view.

Our paper has a number of important implications. First, individual preferences for redistribution cannot be fully explained by economic self-interest. Second, the historical macroeconomic environment can be crucial in the determination of economic attitudes. Third, the findings in this paper also provide firm empirical grounds for the models that endogenize political preferences and beliefs.[10]

The paper is organized as follows. In Section 2 we provide a short theoretical discussion and review the literature on the driving forces of preferences for redistribution and government intervention. Section 3 describes the data and the empirical strategy for the General Social Survey. Section 4 presents the cross-country analysis. Section 5 looks at the longitudinal evidence drawn from the NLS72. Section 6 investigates the presence of heterogeneous effects and Section 7 concludes.

2. Literature review

Our paper is related to the literature analyzing the determinants of preferences for redistribution.[11] The standard economic model of preferences for redistribution (Meltzer and Richard, 1981) assumes that individuals' preferences for redistribution are based on a cost-benefit analysis. In models with exogenous and deterministic pre-tax income, individual's current and future net income determines preferences for redistribution. This mechanism requires that the support in favor of the more redistributive policies should be inversely related to an individual position in the income scale. If an individual is a direct recipient of a transfer program (or likely to receive it, for example as a function of his/her unemployment status), he/she favors it. Expectations of income mobility also affect individual economic motives; today's poor, who expect to be rich tomorrow, might not like redistributive policies because they will have to support them rather than benefit from them in the future (see Ravallion and Lokshin, 2000). Models based on a cost-benefit analysis imply that personal net income is not the only determinant of preferences for redistribution: a rich person living in a poor neighborhood, for example, may favor state intervention because he/she benefits from public goods provided in the region.[12]

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[10] Piketty (1995), Alesina and Angeletos (2005) and Benabou and Tirole (2006).

[11] For a general review of the literature on preferences for redistribution see Alesina and Giuliano (2011).

[12] Along these lines Luttmer (2001) shows that preferences for redistribution increase when the share of local welfare recipients from one own racial group increases.

A second line of research, the so-called "public-value approach," links an individual's preferences for redistribution to her public values.[13] According to this approach there is no link between personal net income and support for redistribution. What matters are idiosyncratic beliefs about the importance of luck versus effort as a driver of economic success. In a seminal paper, Piketty (1995) argues that beliefs are self-reinforcing. A belief that luck is important leads to higher taxation, more redistribution, and ultimately to less effort. In contrast, when effort plays a large role, rational agents, fearing adverse incentive effects, would moderate taxes. Interestingly for our purposes, he argued that shocks may make one belief particularly important at different points in time, giving rise to economic systems that differ greatly in the amount of government intervention.[14] The mechanism outlined in Piketty (1995) is important for the interpretation of our findings: episodes of macroeconomic shocks generate more uncertainty in the economy, which could induce people to give more weight to the importance of luck as a driver of economic success. As a result, they should also become more inclined to support redistribution. We contribute to this literature by providing empirical support for this theory and showing that the historical macroeconomic environment has an impact on preferences for redistribution and on the belief about the relative importance of luck versus effort as a driver of economic success.

This paper is also related to the literature on the implications of macroeconomic shocks on economic outcomes. Shocks may have long-lasting effects on labor market outcomes or participation into the stock market. For instance, young graduates entering the labor market in a recession suffer significant initial earning losses, which either eventually fade (Oreopoulos et al. 2012) or become permanent (Kahn 2010). Several papers in corporate finance look at the importance of recent returns on young investors in the 1990s (Greenwood and Nagel 2009 and Vissing-Jorgensen 2002). Graham and Narasimhan (2004) find that corporate managers who lived during the Great Depression choose a more conservative capital structure. In a similar vein, Malmendier and Nagel (2011) show that individuals' experiences of macroeconomic shocks affect their stock market participation and the fraction of wealth that they are willing to invest in stocks[15].

Finally, our paper is related to the growing empirical literature on the determinants of beliefs. This literature has studied the impact of property rights (Di Tella, Galiani, and Schargrosky

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[13] See Corneo and Gruner (2002).

[14] Other papers that explore related ideas concern the role of upward mobility (Benabou and Ok, 2001), fairness (Alesina and Angeletos, 2005), beliefs in a just world (Benabou and Tirole, 2006).

[15] Recessions are also relevant for babies health (Deejia and Lleras-Muney, 2004), fertility (Ben-Porath, 1973) and adult health related behavior (Ruhm, 2000).

2007)[16] and crime (Di Tella, Donna and McCulloch 2007) on beliefs, the relationship between dependency on oil and individualism (Di Tella, Dubra and McCulloch 2010), the importance of political regimes (Alesina and Fuchs-Schuendeln 2008) and culture (Luttmer and Singhal 2011) in shaping preferences for redistribution.

3. Evidence from the General Social Survey

Our primary dataset on individual and political beliefs is the General Social Survey (GSS), which provides repeated cross-section observations on political and economic beliefs and various individual characteristics. The GSS, conducted by the National Opinion Research Center at the University of Chicago, is a nationally representative sample for the US of about 1,500 respondents each year from 1972 through 1993 (except for the years 1979, 1981 and 1992). It continues biennially with 3,000 observations from 1994 to 2004, rising to 4,500 respondents in 2006, and with 2,000 observations in 2008 and 2010.[17] We use all the data available from 1972 to 2010. Descriptive statistics for our sample are presented in Table A1.

3.1. Empirical analysis

The key variables for our analysis are several measures of preferences for redistribution and political behavior as dependent variables and a regional measure of macroeconomic shock as explanatory variable. As measures for preferences for redistribution we use the answers to three questions:

1. "Some people think that the government in Washington should do everything to improve the standard of living of all poor Americans (they are at point 5 on this card). Other people think it is not the government's responsibility, and that each person should take care of himself (they are at point 1). Where are you placing yourself in this scale?" This is referred to as "*help poor.*"

2. "We are faced with many problems in this country, none of which can be solved easily or inexpensively. I am going to name some of these problems, and for each one I would like you to tell me whether you think we are spending too much money on it, too little money or about the right amount." A list of items follows, including "Assistance to the poor." We

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[16] The authors find that squatters in Buenos Aires, who were randomly assigned property rights, developed beliefs more favorable towards a capitalistic society, as represented by beliefs on individualism, materialism and the role of merit and trust.

[17] The survey is conducted face-to-face with an in-person interview by the National Opinion Research Center at the University of Chicago, of a randomly-selected sample of adults (18 and older) who are not institutionalized. The survey takes about 90 minutes to administer. For detailed information on the GSS see: http://www.norc.org/GSS+Website/. Sampling weights are used to adjust for differences in sampling frame across years.

coded the variable so that a higher number indicates too little assistance to the poor. This is named "*assistance poor.*"

3. "Some people say that people get ahead by their own hard work; others say that lucky breaks or help from other people are more important. Which do you think is most important?" The question can take values from one to three. Hard work is most important (1), hard work and luck are equally important (2), luck is most important (3). This is referred to as "*work-luck.*"

The rationale of the first two variables is clear. The theoretical motivation for using the last variable is that an individual who believes that luck is the major determinant of economic success is expected to favor government redistribution; in contrast, an individual who believes in the importance of personal hard work is expected to oppose redistribution as discussed above (Piketty, 1995).

One concern when interpreting questions on preferences for redistribution is whether they are an accurate measure of underlying preferences. If self-reported preferences for redistribution reflect underlying preference, then they should correspond to voting behavior and political ideology. We examine the validity of self-reported measures by looking at three different measures of political behavior corresponding to the following three questions:

1. "We hear a lot of talk these days about liberals and conservatives. I am going to show you a seven point scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Where would you place yourself in this scale?" We coded the question so that a higher number corresponds to extremely liberal. The answer to the question is referred to as "*political ideology.*"

2. "Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent or what?" The question could take values: Strong Democrat (6), Not very strong Democrat (5), Independent, close to Democrat (4), Independent (3), Independent, close to Republican (2), Not very Strong Republican (1), Strong Republican (0). We drop from the analysis people who answered "Other party, refused to say" or "Don't know".[18] The answer to this question is referred to as "*party affiliation.*"

3. The third political measure, *voting Democrat,* is based on whether the respondent voted for a Democratic president in the last elections. We eliminate those observations where individuals either did not vote or voted for an independent.

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[18] We also run the regressions by excluding people who answered "independent", without any indication of whether they are close to Republican or Democrat from the analysis. Our results are robust to this exclusion.

We use as a measure of macroeconomic shocks large regional recessions (as opposed to state recessions). The GSS contains information on census regions (but not on single states) in which the person was living when he/she was 16. We use this information to match individuals with the macroeconomic shock in the region where the person was living during his/her youth.[19] We assume that the individual was living during the "impressionable years" range in the region where he/she was living at 16. One problem with assigning to the whole "impressionable years" period the region of residence at 16 is that people could move during that period. Note that if people moved, this will introduce a measurement error which will bias our results toward zero. We address this problem by running our regressions on a subsample of individuals who lived, at the time of interview, in the same region where they lived at 16. We discuss the differences in results below. In addition, the longitudinal analysis (for which individuals' locations during and after the "impressionable years" range are known) confirm our results. Finally, the results are confirmed in the cross-country analysis, where we run the regressions on the sample of people who have been living in the same country throughout their lives.

To have the longest possible time series, we construct a measure of regional recessions using data on regional personal income from the Bureau of Economic Analysis (BEA). The BEA provides annual estimates of per-capita personal income at the state level from 1929 to today.[20] We construct a measure of real per capita personal income using data on state personal income and population data, adjusted for inflation.[21] For our dependent variable, we construct a variable equal to 1 if the individual experienced at least one year in which the real regional per capita GDP growth was lower than -3.4 per cent during her "impressionable years" and zero otherwise. This threshold represents the lowest 10th percentile of the GDP growth distribution for the 9 regions in the US for the period 1929 to 2010.[22]

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[19] The nine macro regions are: New England (Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island), Middle Atlantic (New York, New Jersey and Pennsylvania), East North Central (Wisconsin, Illinois, Indiana, Michigan and Ohio), West North Central (Minnesota, Iowa, Missouri, North Dakota, Nebraska, Kansas), South Atlantic (Delaware, Maryland, West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida, District of Columbia), East South Central (Kentucky, Tennessee, Alabama, Mississippi), West South Central (Arkansas, Oklahoma, Louisiana, Texas), Mountain (Montana, Idaho, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico) and Pacific (Washington, Oregon, California, Alaska, Hawaii).

[20] The BEA has also data on the gross state product, i.e. GDP, at the regional level. This series is however available only starting from 1963. The correlation between real per capita personal income and real per capita GDP is 0.92. We could also have used regional unemployment rates as a measure of macroeconomic recessions. This variable is however available only since 1968 from the BLS. As a result we would lose too many observations. In the longitudinal analysis (which covers the period from 1972 to 1986) we can use measures of state unemployment rates. We found that the results using unemployment are stronger when compared to measures of recession based on GDP.

[21] We use national CPI to correct for inflation.

[22] We choose the lowest 10th percentile rather than simply negative GDP growth because 80% of the individuals experienced at least one year of negative growth during their critical age period in our sample when using this definition,

Figure 1 shows if individuals living in a certain region experienced a recession during their impressionable years, by year of birth. The macroeconomic experiences of individuals living in different regions during their impressionable years were quite different. For example, the cohorts born between 1933 and 1940 were subject to at least one year of recession if they lived in New England, East North Central and South Atlantic, but not in the other regions.[23] Similarly, the cohorts born between 1960 and 1970 did not experience any recession if they lived in New England, but did have that experience roughly 90 percent of the time if they lived in the Pacific or West South Central regions. This percentage is around 50 percent for young adults spending their impressionable years in the Middle and Southern Atlantic, or Mountain regions; seventy percent for people living in the West North Central region and around 30 percent for people living in the East (north or south) Central region.

Our baseline specification is the following:

$$Beliefs_{irt} = \alpha_0 + \alpha_1 macro\ shock_{r16, imp.years} + \alpha_2 X_i + \delta_r + \eta_t + \gamma_{r16} + \delta_r \eta_t + \varepsilon_{irt} \qquad (1)$$

where $Beliefs_{irt}$ indicates the response to one of the questions described above by individual i, interviewed at time t in region r. The variable $macro\ shock_{r16, imp.years}$ is a dummy indicating whether the individual experienced a recession during the impressionable period in his/her region of residence at 16. Given that we do not have the region of residence for each year of an individual's life, we use the region of residence at age 16 for the whole 18-25 range. This introduces some noise, which is likely to cause attenuation bias. In the robstness section, we also report the results for the sample restricted to those individuals who lived, at time of interview, in the same region they lived in at 16. X_i is a vector of individual characteristics including age, gender, race, as well as measures of income, education, marital, and labor market status. In some specifications, we also include information on family background of the individual at 16. In particular, we control for both the level of education of the father and family income at 16.

All specifications include current region fixed effects (δ_r), time fixed effects (η_t), and region of origin fixed effects (γ_{r16}) to rule out the possibility of capturing a spurious correlation between region-specific characteristics and beliefs.[24] Finally, we include all region*year interactions (

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therefore a shock simply defined as negative growth would not have given enough variation. We could have used also the 5th lowest percentile (corresponding to a growth rate lower than -8.4%), the problem with that measure is that it captures only the generation who experienced a recession during the period 1929 to 1947.

[23] Only people born between 1933 and 1936 experienced a recession in the Southern Atlantic region.

[24] The region at time of interview does not correspond necessarily to the region *r16* in which the individual grew up, as individuals may have moved.

$\delta_r \eta_t$) to take into account all possible time varying regional covariates. Our variable of interest, *macro shock*$_{r16,imp.years}$, has cross regional variation but also variation between cohorts. For that reason, in the less parsimonious specification, we also include an almost full set of cohort dummies and therefore control for any omitted variable that has cohort-level variation.[25]

A few issues on the identification should be discussed beforehand. First, the identification of the effects of macro shocks on beliefs comes from the fact that different regions experienced different shocks over the years. This identification strategy is possible because cohorts living in different regions experienced different macroeconomic cycles as discussed above and shown in Figure 1.

Second, by using years of interview fixed effects we control for the common *national* history. We also control for the interaction between regional and year of interview fixed effects, to capture recent *regional* history. In the less parsimonious specification, we also include cohort dummies to be sure that the regional variation is not picking up cohort-level variation. We also control for both the region where the person is living and the region where the person was at 16. This helps to control for regional ideology both at birth and later on and anything specific to a certain region of origin or residence that could drive differences in beliefs.

Third, macroeconomic shocks may also have an effect on an individual's endowment through education and/or health, income or differences in labor market experiences. Individual endowments, in turn, are known to be an important variable in explaining the formation of beliefs (Di Tella, Galiani, and Schargrodsky 2007). Therefore, macroeconomic shocks may influence adult beliefs through both the direct channel discussed above and the indirect channel of individual endowment. In order to control for the endowment effect, we introduce individual characteristics at the time of the interview and family background controls (described above).

All regressions are estimated using OLS for ease of interpretation, but similar results are obtained with ordered logit or probit (depending on the specification). Descriptive statistics for all our measures are reported in the Appendix, Table A1.

Tables 1-4 report the results for preferences for redistribution (columns 1 and 3) and political ideology and behavior (columns 4-6) under a variety of specifications. In each table (columns 7-9) we also report the estimated average effect size (AES) coefficients. We computed the AES following Kling, Liebman, Katz, and Sanbomatsu (2004). Let β^k indicate the estimated

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[25] The problem with working solely with cross-regional variation is that sometimes it could not give us enough statistical power to estimate the parameters with sufficient precision.

recession coefficient for the outcome variable k and let σ^k denote the standard deviation of outcome k. Then, the AES is equal to $\frac{1}{K}\sum_{k=1}^{K}\frac{\beta^k}{\sigma^k}$, where K is the total number of outcome variables[26]. AES estimates have two advantages: whereas results on each single question could potentially be due to chance (Type I error), this is less likely when several questions are simultaneously summarized in an index. Moreover, the use of indices could also reduce the risk of low statistical power (Type II error). We report three sets of AES estimates: one for preferences for redistribution (combining the three measures on preferences for redistribution), one for political behavior (combining the three measures on political behavior) and one for the six variables all together.

We run four different specifications (reported in Tables 1-4). The baseline specification (reported in Table 1) includes current region and year of interview fixed effects to control for nationwide and region-specific effects, and region at age 16 fixed effects to rule out the possibility of capturing something specific to a certain region of origin that could drive differences in beliefs. In addition, this specification also controls for basic demographics (gender, race, and age dummies) together with employment and marital status, education and dummies for family income. This second group of variables controls for those variables that could have been influenced by a recession during the formative years.[27]

Table 2 adds to the baseline specification cohort effects[28], whereas Table 3 includes two more variables, meant to capture the status of the person when he/she was 16: a non-parametric specification of the family income variable at 16 (with the inclusion of 5 dummies)[29] and the level of

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[26] To properly calculate the sample variance of AES, the coefficients β^k are jointly estimated in a seemingly unrelated regression framework. See Clinginsmith, Khwaja and Kremer (2009) for an alternative application and further details.

[27] Employment status is defined using a dummy indicating if the person is unemployed; we control for marital status with a dummy indicating whether the person is married. Education is measured using number of years of education. We control for income in a non-parametric way by including 12 income dummies; income could be the main reason for why people could be more pro-redistribution today (a difference experience in the labor market during a recession could be reflected in the income of the person today if the effect of a recession in the labor market, as reflected through wages, is permanent). The income variable in the survey is defined in the following way: "In which of the following groups did your family income, from all sources, fall last year before taxes, that is?" The answers are under \$1,000, \$1,000 to \$2,999, \$3,000 to \$3,999, \$4,000 to \$4,999, \$5,000 to \$5,999, \$6,000 to \$6,999, \$7,000 to \$7,999, \$8,000 to \$9,999, \$10,000 to \$14,999, \$15,000 to \$19,999, \$20,000 to \$24,999, \$25,000 and over. The GSS also provides a continuous variable on family income. When we include the log of real income as control, instead of the twelve dummies, we obtain very similar results.

[28] We add as many cohort dummies as possible up to the point that age, time and cohort dummies are not perfectly collinear.

[29] The variable on the income of the family when the person was 16 is defined in the following way: "Thinking about the time when you were 16 years old. Compared with American families in general then, would you say your family income was—far below average, below average, average, above average, far above average"

education of the father (given by the number of years of education).[30] These variables are meant to capture individual characteristics, which could be correlated with frequency of regional economic shocks.[31]

Table 4 is the most demanding specification, as it includes cohort effects, the additional family background controls included in Table 3 and also all interactions between region of interview and year effects to take into account all possible region- and time-varying covariates. In all the specifications we cluster the standard errors at the region-year level.

3.2. Results

The first three columns of Table 1 report the regressions with the beliefs about preferences for redistribution. We coded the variables so that a positive coefficient means a higher preference for government redistribution. The coefficient on the variable indicating whether the person experienced a recession during her impressionable years is significant at the 10 percent level in all specifications. The significance level increases to 1 percent when AES are used.

To assess the magnitude of our results we calculate the beta coefficients (they are reported in Table A10). A one standard deviation increase in our shock measure is associated with 0.014 increase in the standard deviation of preferences for redistribution. The result is about ⅔ of the effect of being unemployed, but much smaller than the effect of race or education.[32] Our specification is particularly demanding and has the advantage of precisely identifying the effect of macroeconomic shocks on beliefs while controlling for age, time and cohort effects, together with a large set of individual controls. In part 3.5 (below) we perform some exercises to give a sense of the aggregate relevance of living through a recession. When we look at the aggregate effect, the recession experience is much more important in terms of magnitude, despite the relatively small regression coefficient in the individual level regressions.

The coefficients on the other variables are consistent with the previous literature. Educated, married, male, and high income-earning individuals are less favorable to redistribution. Race is an important factor in determining individual preferences for redistribution (Alesina and La Ferrara, 2005).[33]

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[30] There is also a question on the level of education of the mother but the number of missing values is much higher than the variable on the level of education of the father.

[31] The number of observations is smaller in Table 3 due to a higher number of missing observations.

[32] The coefficient of race on preferences for redistribution has always the largest effect in literature (see for example Alesina and Glaeser, 2004; Alesina and Giuliano, 2011; and Luttmer, 2001).

[33] Note that the male dummy has a positive effect on the belief that luck is more important than effort. This result is confirmed in the US longitudinal analysis but not present in the cross-country regressions. Education also appears to have a positive sign in the *work-luck* variable, but we do not find similar results in the longitudinal analysis or the cross country analysis.

In columns 4-6 we report the results for political views and political behavior. The coefficients are estimated more precisely; in addition, the relative magnitudes of the recession coefficients are higher. For example, the relevance of economic shocks is 4 times the effect of being unemployed and comparable to the effect of education. As before the effect of a recession is smaller than the effect of race (with the exception of the question on political ideology, where the results are of similar magnitude).[34] The signs of the coefficients are consistent with the literature. Women tend to be more left wing, together with unemployed people and African Americans. Education could have different effects: more educated people are more likely to be affiliated with the Republican Party, but at the same time define themselves as more liberal (there does not seem to be an effect of education on voting behavior).[35]

Table 2 reports the results by adding a set of cohort dummies[36]. The results are very similar to the baseline specification with the exception of the variable *work-luck*, where we lose some power but the coefficient remains of similar magnitude.

In Table 3, we add controls on family background. Family background at age 16 is relevant in the determination of preferences for redistribution. In particular, a higher family income when young reduces the desire for redistribution, similarly to what is found for current family income. Years of education of the father have a similar effect as one's own education. This variable is negatively correlated with preferences for redistribution (with the exception of the work-luck variable[37]) and political behavior.[38]

Table 4 finally reports the results including family background controls, cohort effects and also region-year interactions. This most demanding specification does not change the nature of our results.

3.3. Restricting the sample to non-movers

In the regressions above we use the region of residence at 16 to determine the region of residence for the whole "impressionable years" period. This may introduce some measurement error because some individuals could move from the region of residence at 16 during their "impressionable years."[39] In the appendix, Tables A2-A5, we repeat the specifications of Tables 1-4

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[34] See beta coefficients reported in Table A10.

[35] The discrepancy could be due to a different position on social and economic issues. The result of education on voting behavior is positive in the specification of Table 3.

[36] We add as many cohort dummies as possible up to the point that age, time and cohort dummies are not perfectly collinear.

[37] We find a similar result for the effect of father's education on the work-luck belief in the longitudinal analysis.

[38] Father's education and own education go in opposite direction only in the determination of voting Democrat.

[39] However, this is, in practice, mitigated if most of the movers move within the same macro region and therefore experience the same macro shock.

restricting the sample to non-movers.[40] The results are very similar in terms of magnitude when compared to the results with the whole sample, but they are more precisely estimated, showing that measurement error indeed is weakening our results.

3.4. "Impressionable years" versus other years

Following the social-psychology literature, our analysis focuses on the role of "impressionable years" (between 18 and 25) in the formation of beliefs (Mannheim, 1952; Krosnick and Awin, 1989). In this section, we test whether individuals constantly alter their attitudes in response to changing life circumstances by looking at the impact of recessions during other age ranges. In addition, we also test whether the sensitivity to recessions during the "impressionable years" period declines with age.

In Table A6 we report the results for other age ranges. We repeat our baseline specification (Table 2) based on different eight-year range intervals (2-9, 10-17, 26-33, 34-41, 42-49 and 50-57).[41] The table reports the coefficients on the variable indicating whether the individual experienced at least one recession at different ages.[42] Being exposed to a recession before the age of 17 or after age 25 has little or no impact on beliefs. The formative period between the ages of 18 and 25 is the age during which the majority of beliefs under consideration are formed. The period between 26 and 33 is also relevant for the formation of political beliefs (this is true for each individual variable on political behavior and for the AES estimates), providing some support for the *increasing persistence hypothesis* theory, at least for the case of political behavior.[43]

It is worth noticing that, given the nature of the dataset, it is difficult to compare the importance of the impressionable years versus other periods of life. The GSS only provides information on the region where an individual lived at 16 -- so the further removed the time period from that age, the higher the measurement error. To limit this problem, we also run the regressions for other age ranges by limiting the sample to non-movers (the results are reported in Table A7). The results are very similar to those with the whole sample.

Given the relevance of the "impressionable years" period, one interesting question is how much the effect of experiencing a macroeconomic shock when young on preferences for

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[40] We define as a non-mover an individual whose region of residence at 16 is the same as the region of residence at time of interview.

[41] We chose the intervals of equal length in order to be consistent with the impressionable years range. We also report a specification for an age period centered around 16 (between 14-18). During this period the probability of moving to go away for college, for example, should be lower.

[42] We do not report the coefficients on the remaining controls, but complete results are available from the authors.

[43] Recessions experienced during this period also appear to be relevant for the formation of the belief regarding the importance of luck as a determinant of success. However, this result is not confirmed when the sample is restricted to non-movers (see Table A7).

redistribution and political behavior declines with age. To study the speed at which beliefs decline with age we look at the interaction between experiencing a shock during the impressionable years and the age of the person. The results are reported in Table A8 of the appendix. While we find that the result is strong for the impressionable years period, the effect fades with time, especially for political behavior.[44] This effect is not present when we look at preferences for redistribution (with the exception of the variable *assistance poor*, where there is some evidence of its effect declining with age). The declining effect for political behavior is in line with the *increasing persistence hypothesis* theory, which states that the period between 18-25 is the most relevant for the formation of beliefs, but the effect could fade slowly (and not completely) with age.

3.5. An aggregate perspective

Our estimation uses cross-sectional differences in regional economic conditions to estimate the impact of recessions on beliefs. By including cohort, age and year of interview fixed effects together with a large set of individuals and family controls, our specification has the advantage of isolating the impact of recessions on preferences for redistribution and political behavior. In this section, we provide an aggregate perspective on the importance of macroeconomic shocks on preferences for redistribution and political behavior by constructing a counterfactual exercise -- what would have happened to the distribution of political behavior across the nine US regions, if people had not experienced a recession when young. To do this, we first construct fitted values for the variable "voting for the Democratic Party" using the specification of Table 2. We next construct a counterfactual series for political behavior without heterogeneous effects of recession (by falsely assuming a coefficient equal to zero for the recession variable, α_1 in equation 1). Summing up across individuals within each region at each time of interview allows us to compare the evolution of political behavior with and without the effect of experiencing a recession during the impressionable years. In Figure 2, for each region we plot the ratio of fitted regional political behavior (from column 6 of Table 2) to the counterfactual regional political behavior obtained by setting the economic shock coefficient equal to zero. The fitted-counterfactual ratio has been multiplied by one hundred to be expressed as a percentage. Deviations from a value of one hundred are attributable to the heterogeneous effects for the population of that region in one specific interview year of living through a recession when young. Since we control for year of interview, age and year of birth fixed effects, together with region of residence at 16, region of interview fixed effects and individual controls, the difference between the fitted and counterfactual series can only identify the

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[44] This is in line with the results obtained when we run the regressions on other age ranges.

heterogeneous effects of having different individuals with different macroeconomic experiences during youth in each region. The result on the "voting Democrat" variable shows a consistent picture. Having people who experienced a recession when young affected the probability of voting for the Democratic Party in a sizeable matter in each region of the US. The effect, which could be as large as 10 percent, was more pronounced during the 1970s and 1980s. This is not surprising, as people living in these regions during this period were young during the Great Depression.

A similar result performed on the other beliefs gives a consistent picture,[45] with the magnitude of the effect declining over time and with the effect on political beliefs being generally larger than the one on preferences for redistribution.[46]

4. Evidence from the World Value Survey

We now turn to our specification that examines differences in macroeconomic conditions using cross-country evidence. The analysis is relevant in showing that results similar to those found in the US exist when we replicate our analysis across countries. The analysis relies on data from the *World Value Survey* (WVS), a compilation of national individual-level surveys on a wide variety of topics, including preferences for redistribution and political behavior. The survey also contains information on standard demographic characteristics, such as gender, age, education, labor market status and income. The survey has been carried out five times (in 1981-1984, 1990-1993, 1995-1997, 1999-2004 and 2005-2007). The coverage varies depending on the wave, starting with 22 countries in 1980 and covering 81 countries in the fourth wave. The fifth wave has been carried out in 57 countries around the world.

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[45] The effect on preferences for redistribution explains in average between 3 and 10 percent of the effect, depending on the variable. The effect on political ideology and party affiliation is closer to the effect of voting for the Democratic Party. The results are available from the authors.

[46] In the appendix we also report the results of a difference exercise, whose goal is to gauge whether the time variation in average demographics is smaller relative to the time variation in average recession experience. We do so by collapsing the data at the regional level for each year. The results of the regression when aggregating the data at the regional level at each point in time and the corresponding beta coefficients are reported in the Appendix (Table A9 and Table A12, respectively.) From the analysis of the beta coefficients, it is indeed apparent that in aggregate the effect of growing up in a recession is relatively important compared to the other individual characteristics. For example, economic shocks have the same magnitude or even a larger effect than the percentage of African Americans in a region. The effect is also comparable to the impact of education (the effect however varies depending on the variable, for example the effect is smaller for the variable *help poor* but larger for both the *assistance poor* and *work luck* variables; the impact of a macroeconomic shock is normally larger than education when we look at political behavior). Economic shocks have a larger effect than income when we look at political behavior; the effect is also sizeable when we look at preferences for redistribution.

The WVS contains a richer set of questions on preferences for redistribution or preferences for government intervention in the economy in general. In particular we run regressions on six different questions:

1. *Government responsibility:* The question asks the respondent: "How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. People should take more responsibility to provide for themselves (1) vs. The government should take more responsibility to ensure that everyone is provided for (10)?"

2. *Income equality:* The question asks the respondent to place his/her views on a scale from 1 to 10 on the following statement "Income should be made more equal" (1) versus "We need larger income differences as incentives" (10).

3. *Private-state ownership*: The question asks the respondent to place his/her views on a scale from 1 to 10 on the following statement: "Private ownership of business should be increased (1), versus "Government ownership of business should be increased (10)".

4. *Society: egalitarian-competitive*: the question asks the respondent "And now, could you please tell me which type of society you think this country <u>should</u> aim to be in the future. For each pair of statements, would you prefer being closer to the first or to the second alternative? First statement: An egalitarian society where the gap between rich and poor is small, regardless of achievement. Second statement: A competitive society, where wealth is distributed according to ones' achievement". The question can take values from 1 to 5: First (1), Somewhat closer to first (2), Can't say (3), Somewhat closer to second (4), Second (5)".

5. *Society: welfare-low taxes*. This question, like the one above, asks the respondent a preference between two different statements, on a scale of 1 to 5. The first statement is: "A society with extensive social welfare, but high taxes." Second statement: "A society where taxes are low and individuals take responsibility for themselves. "

6. *Work-luck*. The question asks the respondent to choose on a scale from 1 to 10 between the following two statements: "In the long run, hard work usually brings a better life" (1), "Hard work does not generally bring success- it is more a matter of luck and connections" (10).

The WVS also has two questions on political ideology and party affiliation: [47]

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[47] The WVS does not contain questions on voting behavior in the past elections.

1. *Political ideology*: the question asks the respondent, "In political matters, people talk of "the left" and "the right". How would you place your views on this scale, generally speaking?". The answer could go from "Left" (1) to "Right" (10).

2. *Party affiliation*. The question asks the respondent: "If there were a national election tomorrow, for which party on this list would you vote?" Each country in the survey has a country specific list of political parties. We assign to each party a number summarizing their political ideology. Parties are coded on a scale from 1 to 10 (with 10 indicating a more left wing ideology) using data from Huber et al. (1995).

We code all the questions such that a higher number is associated with more government intervention and more left wing attitudes.

In the case of the cross-country analysis we rely on the definition of economic shocks by Barro et al. (2008).[48] Barro et al. (2008) construct a measure of crisis for a large set of countries starting from and improving Angus Maddison's dataset. The dataset includes time-series data on GDP from 1870 to today for a sample of 39 countries and estimates periods of economic disasters. They define trough-peak disaster periods as contractions in GDP growth of at least 10%. For each country, the authors provide the time interval of the economic disasters. For the OECD countries most of the macroeconomic disasters took place before 1950 (with the exception of Finland) whereas non-OECD also countries experienced macroeconomic disasters after 1950.[49]

Our macroeconomic shock variable is a dummy equal to one if the person experienced a macroeconomic disaster (following Barro's definition) during his/her impressionable years. Figure 3 shows our variable of interest by year of birth and for the 37 countries[50] present in most of our regressions. The variable is a dummy for whether that specific cohort in one specific country had a macroeconomic disaster during their impressionable years. As is apparent from the picture, there is substantial variation in terms of exposure to different recession experiences. Latin American countries have many cohorts exposed to economic disasters. In the OECD countries, the oldest cohorts have typically been more exposed to economic disasters, but the extent of the exposure varies a lot among them as well.

In terms of individual controls we follow closely the specification of the GSS and include gender, dummies for age, employment and marital status, education and income in our regressions.

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[48] All the details about the dataset constructed by Barro et al. (2008) are provided in the Appendix.
[49] For example: for the US periods of economic disasters are: 1906-1908, 1913-1914, 1918-1921, 1929-1933, 1944-1947. For Argentina, periods of economic disasters are: 1887-1991, 1895-1898, 1899-1900, 1901-1902, 1906-1907, 1912-1917, 1928-1932, 1958-1959, 1980-1982, 1987-1990, 1998-2002. For the whole list and periods of economic disasters by country, see Barro et al. (2008).
[50] Of the 39 countries covered by Barro, Malaysia and Sri-Lanka are not present in the WVS.

Education is defined using a variable in the WVS that makes comparable the level of education across countries. Education is coded as low, medium and upper. We also include in all our specifications 10 income dummies. The WVS has a recoded version for all the countries, where each category includes an income decile. Unfortunately the WVS does not contain any information on family background (such as family income when young or parental level of education) or race. We are therefore not able to include these controls in our analysis.

The basic specification is the following::

$$Beliefs_{ict} = \alpha_0 + \alpha_1 macro\ shock_{c,imp.years} + \alpha_2 X_i + \delta_c + \eta_t + \delta_c \eta_t + \varepsilon_{ict} \qquad (2)$$

where $Beliefs_{ict}$ indicates the response to one of the questions described above of individual i, interviewed at time t in county c. The variable $macro\ shock_{c,imp.years}$ is a dummy indicating whether the individual experienced a recession during the impressionable period in his/her country. We drop immigrants from the analysis. X_i are individual characteristics described above, δ_c, η_t and $\delta_c \eta_t$ are country, wave fixed effects and their interactions.

We present three different specifications. In the baseline specification, similar to the GSS specification, we control for age, gender, marital and labor market status, income and education and country and wave fixed effects. The baseline specification is reported in Table 5 (in Tables A13 and A14 of the appendix we also report the specifications with cohort dummies, and cohort dummies and country-year interactions, respectively).

4.1. Results

The first six columns of Table 5 report the regressions with the beliefs about preferences for redistribution and government intervention. Individuals who experienced a macroeconomic disaster when young prefer redistribution (a positive coefficient means a higher preference for government redistribution and government intervention in the economy). The coefficient on the variable indicating whether the person experienced a recession during her impressionable years is always significant at least at the 10 percent level in all specifications, including the two specifications with a smaller set of countries (columns 4 and 5). The AES estimates confirm the general finding found for each single variable and the significance level also increases to one percent. Consistent with the literature and with the findings for the US, educated, married, male, and high income-earning individuals are less favorable to redistribution. [51] Being unemployed increases the desire for government intervention in the economy.

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[51] Being male is also negatively associated with the importance of luck as a driver of economic success. This result is different than what we found in the US in the GSS where there is a positive association between being male and the

To assess the magnitude of our results we calculate the beta coefficients (they are reported in Table A17 of the appendix). A one standard deviation increase in our shock measure is associated with a 0.01 increase in the standard deviation of preferences for redistribution (0.03 when we look at the society aimed by individuals). The magnitude compared with other individual characteristics varies depending on the specification. For example, the impact of having experienced an economic shock when young is equivalent to the effect of being unemployed when we look at the *income equality* belief, 50% when we look at the *work-luck* belief, but about 33% in the *private-state ownership* and *government responsibility* regressions. The effect is between 14 and 20 percent of the effect of having a middle level of education and between 11 and 20 percent of the impact of an upper level of education (note that the education variable loses significance in two out of the six specifications).

In columns 7-8 we report the results for political ideology and party affiliation. We do find a positive association between experiencing a macroeconomic disaster when young and both left wing ideology and affiliation to a left wing political party. The effect is significant at the one percent level for party affiliation and ten percent for political ideology. The AES estimates are significant at the one percent level. In terms of magnitude, the effect of living through a recession is 60 percent of the impact of being unemployed, three times larger than the impact of upper education and almost equivalent to the effect of having a middle level of education (the excluded group is people with a lower level of education). For political ideology, the effect is equivalent to the effect of being unemployed, 50 percent of the effect of a middle level of education, and 17 percent of the effect of upper education. The sign of the remaining coefficients are broadly consistent with the literature. Women tend to be more left wing (although the coefficient is not significant). Being unemployed is also associated with a more left leaning orientation. Education, similarly to what we found in the US, has a different effect on political ideology and party affiliation. More educated people claim a more left leaning ideology. Education, on the other hand, is negatively associated with declaring the intention to vote for a left-wing party in the next election.[52]

The specification reported in Table A13 and A14, which also includes cohort dummies and country/year of interview interactions broadly confirm our findings. Two of the variables are less precisely estimated but the AES effects are identical to the baseline specification.

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importance of luck as a driver of success (the result is also confirmed in the US in the longitudinal analysis-see Section 4 below).

[52] The discrepancy could be due to a different position on social and economic issues. We found similar results in the US where education was positively associated with belonging to the Republican Party but negatively associated with declaring themselves as conservative.

We also run regressions with the WVS for other age ranges. The results are in line with what we found in the GSS. There is some evidence that, at least for political behavior, the period between 26-33 is relevant for the formation of political beliefs.[53] But no systematic effect on preferences for redistribution or political behavior for other age ranges.

The richer set of questions contained in the WVS allows an analysis of various beliefs. According to the theoretical literature on beliefs (Benabou and Tirole, 2006) another important value that could determine preferences for redistribution is the "belief in a just world" (the authors propose a feedback effect as in Piketty, 1995). The WVS has a question that asks the respondent "Why are there people in this country who live in need? Here are four possible reasons. Which one reason do you consider to be most important?" The respondent could choose between unlucky, laziness or lack of willpower, injustice in society, modern progress. We create a variable equal to one if the person answers "injustice in society."

Cogley and Sargent (2008) show that recessions create a belief of pessimism that is hard to eradicate. The closest question in the dataset is one that asks the respondents how much choice and control they have over their lives. The question is phrased as follows: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where one means "none at all" and ten means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out." We do find that recessions have an impact on beliefs in a just world and pessimism. The sense of injustice and pessimism created from recessions could also help to explain why people become more favorable to government intervention. The results for these two variables are reported in Table A16 of the Appendix.[54]

5. Evidence from the National Longitudinal Survey of the High School Class of 1972

Our third dataset is the National Longitudinal Survey of the High School Class of 1972 (NLS72). The NLS72 dataset provides a nationally representative sample of the high school population for the class of 1972. Since the sample contains only one birth cohort with most students being born in 1954 or 1955, there is no need to correct for potential cohort or life cycle effects. The survey provides a broad spectrum of information on socioeconomic status, home background,

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[53] As for the GSS, we also find that there is a positive effect on political behavior when we center the age range at 16 (and consider the interval between 14 and 18).

[54] The results are robust to the three different specifications and AES estimates are also very strong.

educational attainment, work status, marriage, and the family. For our purposes, the survey also contains data on the belief about the relative importance of work versus luck as a driver of success at the time of original interview and subsequent years. Data was collected during six different years: 1972, 1973, 1974, 1976, 1979 and 1986. Data collected in the base year (1972) contains information on student's personal and family background. Follow ups, conducted in 1973, 1974, 1976, 1979 and 1986, offer information on work, family, educational experience, and opinions since high school. We use the panel dimension of the survey from 1973 to 1986 and merge it with student's personal and family background obtained from the 1972 base year.

Despite the limitation of not having the cohort variation, this dataset has the advantage of following respondents over time, including information on locations at the state level. We use the restricted geo-code version of the survey to know an individual location's in each survey year. This allows us to associate to each individual the unemployment rate of his/her state of residence at each point in time.[55]

The Appendix has more details about the data construction but we briefly describe our variables of interest here. Our dependent variable is a question asking the respondent whether he/she thinks that luck is more important than hard work as a determinant of economic success. The question can take values: 1 (strongly disagree), 2 (disagree), 3 (agree) and 4 (strongly agree).

As an indicator of local economic conditions, we use the unemployment rate of the state in which an individual resided in each survey year. The data on state unemployment come from the BLS. There is substantial variation in the state unemployment rate from 1972-1986, the period in which people are interviewed, making this a useful measure for our purposes. We also use another measure of recession based on the state GDP for comparison with the other parts of the paper.

We include two sets of controls: the first set is time variant and includes labor market and marital status (a dummy for being unemployed and a dummy for being married, respectively), a dummy for when the individual completed college and the log of real personal income. We also include a set of personal characteristics that do not vary over time (the information was collected in 1972): a dummy if the person is African-American, a dummy for being male, a variable indicating the level of education of the father (a dummy if the father has less than high school) and the real log of family income. The survey also collected information on grades during high school, whether the

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[55] The number of valid observations per year is described in the Appendix.

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[55] The number of valid observations per year is described in the Appendix.

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person was in an academic track and whether he/she was working part time during high school.[56] Descriptive statistics for all our variables are provided in the Appendix Table A1.

Given the panel structure of the survey and the particular age period in which individuals are followed, we implement a different empirical strategy than the one used for the GSS and the WVS. We analyze the formation of beliefs as a function of current economic conditions. Since individuals are interviewed during the impressionable years and when they are 32, we would like to compare the impact of local unemployment rate during the impressionable year range and when the person is 32. The panel structure also allows us to look at the interaction effects between the unemployment rate during the impressionable years and personal experiences during that period, since we know the exact location of the individual at each point in time.

For an individual i, living in state s and interviewed at time t, we estimate the following equation:

$$belief_{ist} = \alpha + \beta_0 un_{s,18-25} + \beta_1 un_{s,32} + \gamma_0 X_{it} + \gamma_1 Z_i + \delta_s + \eta_t + \varepsilon_{ist} \qquad (3)$$

where $un_{is,18-25}$ is the state unemployment rate in 1972, 1973, 1974, 1976 and 1979 (in those years the individual is between 18 and 25 years old) and $un_{is,32}$ is the state unemployment rate in 1986 (when the person is 32 years old). In other words, $un_{is,18-25}$ is the state unemployment rate times a dummy which is equal to one if the survey year is between 1972 and 1979 (the impressionable years range for this specific cohort) and zero otherwise; similarly $un_{is,32}$ is the state unemployment rate times a dummy equal to one if the survey year is 1986. X_{it} e Z_i are the time varying and time invariant controls described above. All regressions include state and year fixed effects. The error terms are clustered by state-year.[57] The relevant coefficients for our purposes are β_0 and β_1.

One problem with the empirical approach followed using the panel structure is that we are looking at the contemporaneous effect of local economic conditions on beliefs; therefore, the issue of reverse causality is more relevant than when the analysis is done retrospectively as in the GSS or

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[56] The survey asked to describe the high school program (there are three options: academic, general and vocational). We construct a dummy equal to one if the person describes his/her high school program as academic or preparatory to college. The survey also contains a question about grades in high school: there are 8 different categories, from "mostly below D" (below 60) to "mostly A" (a numerical average of 90-100). To facilitate our analysis we associate to each bracket its mid-point (for example we assign the value of 95 if the respondent reports having a numerical average of 90-100). Finally the survey asked "on the average over the school year, how many hours per week do you work in a paid or unpaid job", the options go from none to more than 30 hours. We assign to each one of the seven categories the mid-point of the interval. All the details on the construction of the variables and the exact coding of the questions are provided in the appendix.

[57] We present the results clustered by state-year because it is a higher level of aggregation and thus a more conservative specification. Another option would be to cluster by individual, since there could be correlations across observations of the same person. Results are very similar when the errors are clustered in this way.

the WVS. Another way of using the NLS72 would be to look at the cross-section of individuals interviewed in 1986 and assign to each of them the average local unemployment rate of the states where they lived between 18 and 25. This strategy would be exactly equal to what we did with the GSS but looking only at one cohort. Indeed, in a regression on the cross section of individuals interviewed in 1986 the average unemployment rate of the states where individuals lived during the impressionable year period has a coefficient of 0.012 and is significant at the 10 percent level, whereas the coefficient of the state unemployment rate in 1986 is -0.002 and not statistically significant[58]. The results are in line with what we found in the GSS and the WVS.

5.1. Results

Table 6 addresses the effect of local macroeconomic conditions during the impressionable years and later on in life. Column 1 presents the results using the local unemployment rate, whereas column 2 uses a dummy indicating a state recession. The unemployment rate during the impressionable years has a strong effect on the belief that luck is an important driver of economic success, whereas unemployment at 32 is not significant. Controls have the expected effect: African Americans tend to believe more in the importance of luck as a driver of success, as did men overall. Being unemployed also plays an important role. On the other hand, a higher personal income and being married reduce the importance of luck as a driver of success. Among the personal characteristics: income of the family when young plays an important role, whereas the education of the father is not relevant. High school students who were in an academic track and had higher grades are less likely to report that luck is more important than effort, together with those who were working part-time when in high school. Overall the picture seems to be fairly consistent with the results found in the GSS. An analysis of the beta coefficients (reported in Table A18 of the Appendix) shows that for the cohort of individuals who finished high school in 1972 the state unemployment rate is as important as race in the determination of work versus luck as a driver of success. The magnitude also appears to be larger than the unemployment status. Interestingly, the state unemployment rate appears to be a more important measure of the severity of economic conditions when compared with the recession dummy (the beta coefficient is almost twice as big).

As we did with the General Social Survey, the sample was split between people who moved between states during the impressionable years and people who did not.[59] The results for people

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[58] There are only 3311 that have not missing observations for the whole survey period.

[59] Roughly 30 percent of our sample changed state at least once between 18 and 25. The average is slightly higher than the GSS. This is partly due to the fact that the NLS72 uses states and not region as geographical units; therefore, people moving between states but within the same region are considered movers in the NLS72 but stayers in the GSS. Also the

who did not move are slightly stronger and in line with what we found in the GSS (beta coefficients are reported in Table A18 of the Appendix).

The focus of this section has been an analysis of the generation who finished high school in 1972. The NLS72 is an important complement to our study because individuals can be observed during their impressionable years and eight years after that. In addition, there is a wealth of information on personal background and personal experiences during the impressionable years period. However, in the NLS72, we are restricted to one specific cohort. We take the NLS72 exercise as complementary evidence to our other datasets. The results are larger overall than the GSS; this could be due to a variety of reasons: there is more measurement error in the GSS since individuals cannot be followed over time; in the GSS the shock is identified at the regional and not state level; the recession of 1979 could have had particularly strong effects on young adults. The result could also be larger in the NLS72 because we study the impact of the contemporaneous effect of the recession during the impressionable years (from the GSS we know that the effect tends to fade with age). Nevertheless, the NLS72 supports a robust finding that confirms what we found for regional shocks in the US and national shocks for a large set of countries: experiencing a recession when young has a permanent effect on the formation of preferences for redistribution.

6. Heterogeneous effects

The analysis so far has considered that all individuals respond in the same way to recessions during their impressionable years. However, the effect of a recession on beliefs could depend on initial conditions during early adulthood, including income and education level of the parents, or performance in high school. In addition, personal experiences during the impressionable years, including marital or employment status or level of income, can also affect the formation of beliefs.

In order to test for this possibility, we include in our specification interaction terms between recessions during critical age and different initial characteristics or different experiences during the impressionable years. The NLS72 is the most appropriate among our datasets because we can observe individuals at each point in time during the impressionable years range.

We present the results in two tables: in Table 7 and 8 we interact the local unemployment rate during the impressionable years with time invariant and time varying controls, respectively. Among the time invariant controls: race slightly reinforces the impact of experiencing a recession when young in the formation of beliefs, whereas having gone through an academic track and having

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sample of the NLS72 is selected in the sense that includes people who finished high school who are typically more mobile than people who drop out of high school.

higher grades in high school reduces it. The other interaction terms with time invariant controls are never significant and overall our main results on beliefs hold. With respect to the time-varying controls: having a college degree or having a higher income during the impressionable years reduces the emphasis on luck as a driver of economic success. For people who completed college and had a higher income during the impressionable years, the impact of recessions on beliefs is slightly lower. The interactions with other experiences during a recession do not give significant results.

We also check for the presence of heterogeneous effects using the other two datasets.[60] In the WVS we find some effect of heterogeneity when we look at the interaction with income and education. The effects are similar to what was found in the NLS72[61]; in addition, we found that the impact of experiencing a macroeconomic shock fades with age, but only for some of the variables on preferences for redistribution and government intervention. Independently of the interaction effects, the overall impact of recession on preferences for redistribution, government intervention and political behavior remains positive and significant. When using the GSS, we found some heterogeneity with income, education and race[62]; on the other hand we do not find any heterogeneity with respect to the income of the family at age 16, father's education or gender.

Overall we find that the effect of experiencing a recession when young is quite general and persistent, with slightly stronger effects for people who suffered more during periods of hardship.

7. Conclusions

This paper shows that large macroeconomic shocks experienced during the critical years of early adulthood shape preferences for redistribution. Individuals who grew up during a recession tend to support more government redistribution and believe that luck is more relevant than effort in determining economic success in life. Our findings are supported using evidence from three different datasets, are robust to the inclusion of a rich set of controls and various specifications. Our results also show that macroeconomic shocks have an impact on actual behavior, such as voting: the effect of having individuals living through a recession when young could explain up to 10-15% of the probability of voting for a Democratic president in some US regions.

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[60] The results are available from the authors.

[61] The interaction effect with education is always negative but significant (at the one percent level) 50 percent of the time (for party affiliation and three of the measures on preferences for redistribution). Similar results are found when we interact our measure of macroeconomic shock with income: the interaction is always negative but significant for two of the measures for preferences for redistribution and for party affiliation. There are no heterogeneous effects by gender.

[62] For education we find a negative interaction only for party affiliation and voting behavior; whereas income has a negative interaction only with the variables *help poor* and *work-luck*. We find an effect of an interaction with being black for the variable indicating political ideology and for the preference for redistribution variable *help poor*.

This paper provides important evidence on the nature of preferences for redistribution. First, we show that shocks experienced during early adulthood have a permanent effect in the formation of beliefs, contributing to the literature that claims that important historical experiences are relevant in shaping economic outcomes. Second, the findings in this paper provide firm empirical grounds for the models that endogenize political preferences and beliefs. Third, this paper links economics to important finding from social psychology.

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Figure 1
At least one recession during the "impressionable years"

year of birth
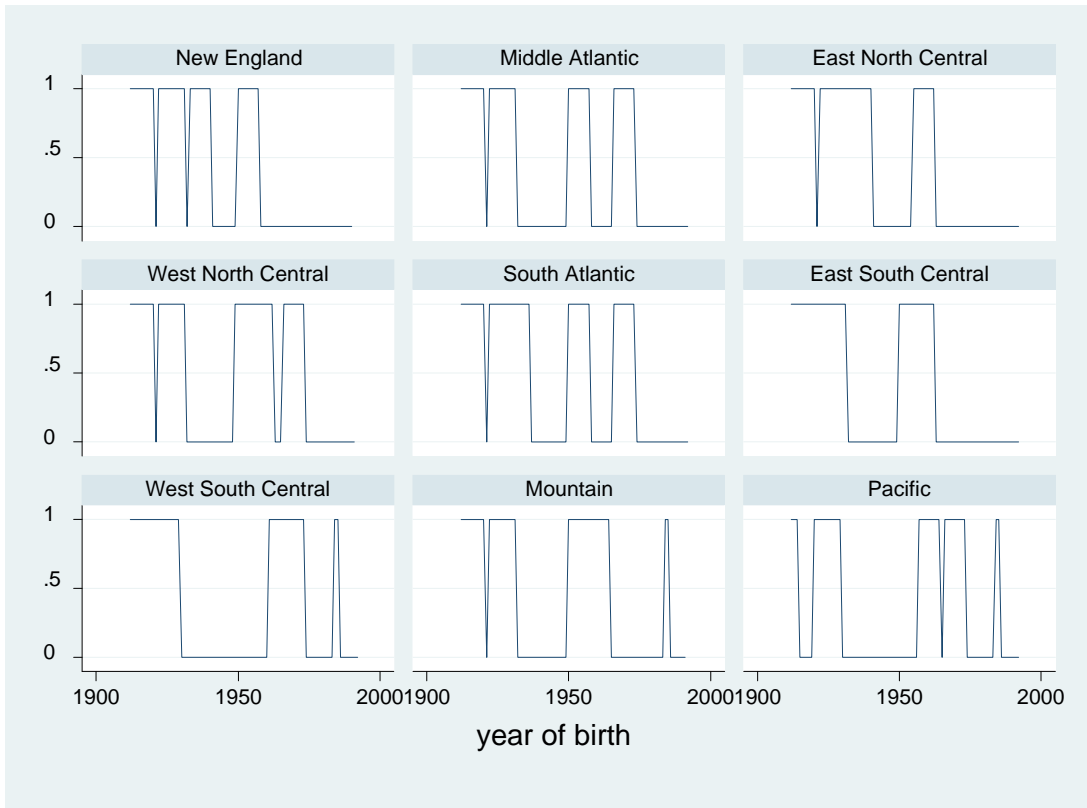
Figure 2
The effect of "growing up in a recession" on "voting democrat" by region

Graphs by region of interview
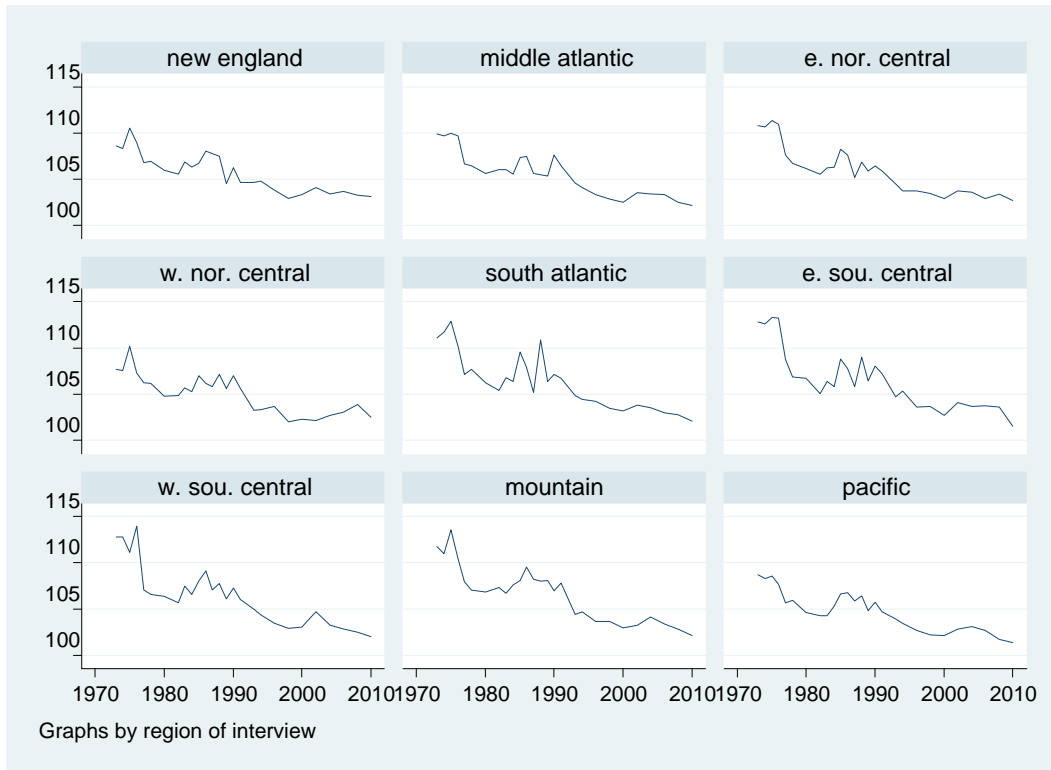
For each region, we plot the ratio of the fitted "voting democrat" outcome (from column (6) of Table 2) to the counterfactual "voting democrat" outcome obtained by setting the economic shock coefficient to zero in the same specification. The fitted-counterfactual has been multiplied by one hundred to be expressed as a percentage. Deviations from a value of one hundred are attributable to the heterogeneous effects of having individuals experiencing a recession when young. Since we control for year of interview, age and cohort fixed effects, together with region of residence at 16 and region of interview fixed effects and individual controls, the difference between the fitted and counterfactual series can only identify the heterogeneous effects on voting for the democratic party of having different individuals with different macroeconomic experiences during young in each region.

Figure 3
At least one recession during the "impressionable years"

year of birth
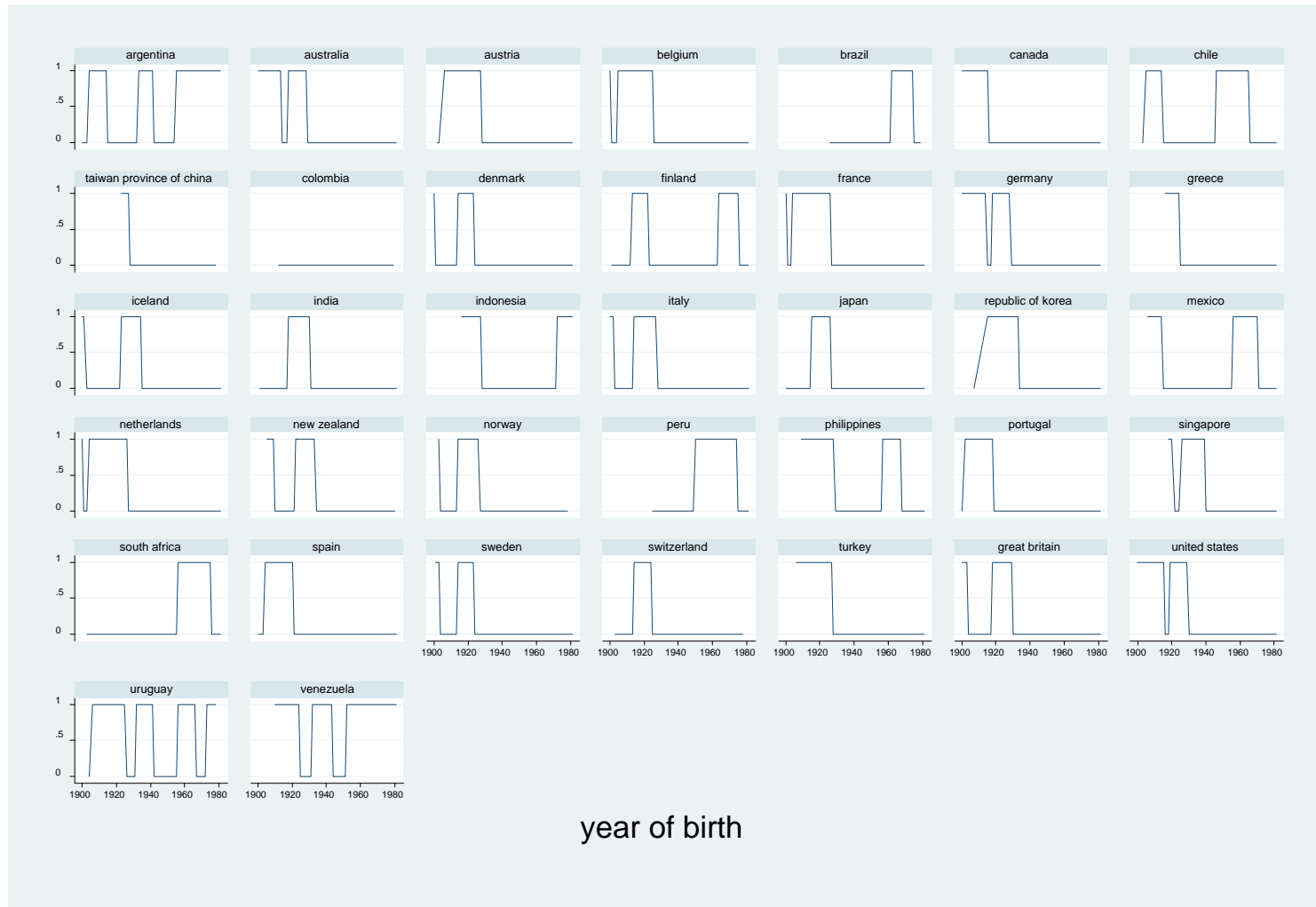
Table 1
GSS: Baseline Specification

	(1) Help poor	(2) Assistance poor	(3) Work-luck	(4) Party affiliation	(5) Political views	(6) Voting democrat	(7) AES Pref. redistr.	(8) AES Pol. Behav.	(9) AES All
Economic shock	0.033*	0.020*	0.016*	0.183***	0.133***	0.043***	0.027***	0.093***	0.056***
	(0.017)	(0.009)	(0.008)	(0.025)	(0.021)	(0.009)	(0.010)	(0.012)	(0.010)
Years education	-0.051***	-0.017***	0.006**	-0.034***	0.020**	0.001			
	(0.006)	(0.002)	(0.002)	(0.008)	(0.008)	(0.002)			
Married	-0.138***	-0.034***	-0.060***	-0.223***	-0.263***	-0.058***			
	(0.016)	(0.009)	(0.008)	(0.035)	(0.014)	(0.008)			
Male	-0.164***	-0.060***	0.076***	-0.179***	-0.088***	-0.037***			
	(0.016)	(0.011)	(0.012)	(0.036)	(0.019)	(0.008)			
Unemployed	0.119**	0.066***	0.058***	0.113**	0.099*	0.051***			
	(0.036)	(0.015)	(0.005)	(0.040)	(0.045)	(0.014)			
Black	0.635***	0.274***	0.107***	1.472***	0.294***	0.450***			
	(0.035)	(0.012)	(0.010)	(0.062)	(0.022)	(0.015)			
Income fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Age fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region interview f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region at 16 f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	24287	15416	30694	43443	38525	27267	23466	36411	29939
R-squared	0.09	0.07	0.01	0.11	0.05	0.15			

Notes: [1] Standard errors are clustered at the region*time level; * significant at 10%, ** significant at 5%, *** significant at 1%

Table 2
GSS: Specification with Cohort Effects

	(1) Help poor	(2) Assistance poor	(3) Work-luck	(4) Party affiliation	(5) Political views	(6) Voting democrat	(7) AES Pref. redistr.	(8) AES Pol. behav.	(9) AES All
Economic shock	0.038*	0.022*	0.016	0.187***	0.136***	0.043***	0.031***	0.094***	0.059***
	(0.017)	(0.011)	(0.009)	(0.030)	(0.027)	(0.010)	(0.009)	(0.013)	(0.009)
Years educ.	-0.051***	-0.017***	0.006**	-0.034***	0.020**	0.001			
	(0.006)	(0.002)	(0.002)	(0.008)	(0.008)	(0.002)			
Married	-0.137***	-0.035***	-0.060***	-0.222***	-0.264***	-0.058***			
	(0.015)	(0.009)	(0.008)	(0.036)	(0.014)	(0.008)			
Male	-0.163***	-0.061***	0.076***	-0.179***	-0.088***	-0.037***			
	(0.016)	(0.011)	(0.012)	(0.036)	(0.019)	(0.008)			
Unemployed	0.119**	0.066***	0.058***	0.116**	0.099*	0.051***			
	(0.035)	(0.016)	(0.005)	(0.041)	(0.045)	(0.014)			
Black	0.635***	0.274***	0.106***	1.473***	0.294***	0.450***			
	(0.036)	(0.012)	(0.010)	(0.062)	(0.022)	(0.015)			
Income fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Age fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region interview f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region at 16 f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Cohort f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	24287	15416	30694	43443	38525	27267	23466	36411	29939
R-squared	0.09	0.07	0.01	0.11	0.05	0.15			

Notes: [1] Standard errors are clustered at the region*time level; * significant at 10%, ** significant at 5%, *** significant at 1%

Table 3
GSS: Specification with Additional Controls

	(1) Help poor	(2) Assistance poor	(3) Work-luck	(4) Party affiliation	(5) Political views	(6) Voting democrat	(7) AES Pref. redistr.	(8) AES Pol. behav.	(9) AES All
Economic shock	0.042	0.048**	0.021***	0.198***	0.161***	0.057***	0.043***	0.111***	0.074***
	(0.023)	(0.016)	(0.006)	(0.026)	(0.033)	(0.009)	(0.009)	(0.015)	(0.010)
Years educ.	-0.037***	-0.014***	0.006**	-0.013	0.022*	0.008**			
	(0.008)	(0.004)	(0.002)	(0.010)	(0.010)	(0.003)			
Married	-0.130***	-0.050**	-0.064***	-0.214***	-0.261***	-0.057***			
	(0.018)	(0.016)	(0.012)	(0.031)	(0.017)	(0.010)			
Male	-0.171***	-0.073***	0.059***	-0.152***	-0.089***	-0.029**			
	(0.027)	(0.017)	(0.014)	(0.044)	(0.020)	(0.010)			
Unemployed	0.128**	0.095***	0.020	0.103*	0.082	0.059***			
	(0.038)	(0.026)	(0.011)	(0.050)	(0.052)	(0.012)			
Black	0.614***	0.268***	0.107***	1.452***	0.367***	0.465***			
	(0.042)	(0.020)	(0.015)	(0.061)	(0.032)	(0.012)			
Father's years of educ.	-0.014**	-0.005**	0.000	-0.041***	0.000	-0.006***			
	(0.004)	(0.002)	(0.002)	(0.006)	(0.003)	(0.001)			
Income fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Income at 16 f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Age fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region interview f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region at 16 f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	13372	8068	17391	24912	21833	16569	12943	21105	17024
R-squared	0.08	0.06	0.01	0.11	0.06	0.14			

Notes: [1] Standard errors are clustered at the region*time level; * significant at 10%, ** significant at 5%, *** significant at 1%

Table 4
GSS: Specification with Cohort effects, Region-Years Interactions and Additional Controls

	(1) Help poor	(2) Assistance poor	(3) Work-luck	(4) Party affiliation	(5) Political views	(6) Voting democrat	(7) AES Pref. redistr.	(8) AES Pol. behav.	(9) AES All
Economic shock	0.034	0.046**	0.024*	0.194***	0.160***	0.057***	0.044***	0.104***	0.072***
	(0.028)	(0.022)	(0.014)	(0.034)	(0.025)	(0.010)	(0.010)	(0.107)	(0.011)
Years educ.	-0.037***	-0.014***	0.006***	-0.014***	0.021***	0.007***			
	(0.004)	(0.003)	(0.002)	(0.005)	(0.004)	(0.002)			
Married	-0.132***	-0.048***	-0.064***	-0.213***	-0.259***	-0.056***			
	(0.021)	(0.016)	(0.011)	(0.028)	(0.020)	(0.008)			
Male	-0.170***	-0.071***	0.059***	-0.147***	-0.084***	-0.027***			
	(0.020)	(0.015)	(0.011)	(0.025)	(0.018)	(0.007)			
Unemployed	0.132***	0.097***	0.020	0.104*	0.076*	0.055***			
	(0.043)	(0.033)	(0.023)	(0.054)	(0.039)	(0.017)			
Black	0.619***	0.272***	0.103***	1.457***	0.377***	0.462***			
	(0.034)	(0.025)	(0.018)	(0.044)	(0.032)	(0.013)			
Father's years of educ.	-0.014***	-0.005**	0.000	-0.040***	0.000	-0.006***			
	(0.003)	(0.002)	(0.002)	(0.004)	(0.003)	(0.001)			
Income fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Income at 16 f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Age fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region interview f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region at 16 f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Cohort f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Regionxyear interact.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	13372	8068	17391	24912	21833	16569	12943	21105	17024
R-squared	0.10	0.08	0.03	0.12	0.07	0.15			

Notes: [1] Standard errors are clustered at the region*time level; * significant at 10%, ** significant at 5%, *** significant at 1%

Table 5
World Value Survey: Baseline specification

	(1) Govern. responsibility	(2) Income equality	(3) Private-state ownership	(4) Society: egalitarian-competitive	(5) Society: welfare-low taxes	(6) Work-luck	(7) Political ideology	(8) Party affiliation	(9) AES Pref. redistr.	(10) AES Pol. behav.	(11) AES All
Economic shock	0.081**	0.074*	0.100***	0.124**	0.111**	0.092*	0.092*	0.181***	0.044***	0.047***	0.045***
	(0.040)	(0.040)	(0.038)	(0.051)	(0.046)	(0.048)	(0.048)	(0.031)	(0.010)	(0.012)	(0.009)
Middle educ.	-0.320***	-0.424***	-0.360***	-0.027	-0.030	0.042	0.100***	-0.153***			
	(0.028)	(0.030)	(0.028)	(0.042)	(0.039)	(0.037)	(0.033)	(0.025)			
Upper educ.	-0.356***	-0.633***	-0.579***	-0.126**	0.006	-0.045	0.329***	-0.072**			
	(0.033)	(0.035)	(0.033)	(0.051)	(0.047)	(0.040)	(0.038)	(0.032)			
Married	-0.062**	-0.063**	0.042	-0.040	-0.007	-0.131***	-0.208***	-0.226***			
	(0.026)	(0.028)	(0.026)	(0.040)	(0.037)	(0.035)	(0.030)	(0.024)			
Male	-0.143***	-0.093***	-0.342***	-0.060*	0.042	-0.242***	-0.035	-0.023			
	(0.023)	(0.024)	(0.023)	(0.034)	(0.032)	(0.030)	(0.027)	(0.021)			
Unemployed	0.339***	0.137***	0.259***	0.016	-0.022	0.183***	0.106*	0.381***			
	(0.046)	(0.048)	(0.047)	(0.063)	(0.059)	(0.058)	(0.058)	(0.040)			
Income f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Age fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	70057	64957	62854	7995	7920	36516	32182	36288	36048	34235	39846
R-squared	0.10	0.09	0.10	0.09	0.12	0.15	0.04	0.13			

Notes: [1] Standard errors are clustered at the country*year level; * significant at 10%, ** significant at 5%, *** significant at 1%

Table 6
NLS72: Baseline Specification

	(1) Work-luck	(2) Work-luck
Unemployment-imp. years	0.017***	
	(0.005)	
Unemployment-at 32 years	-0.002	
	(0.004)	
Recession-imp. years		0.065***
		(0.020)
Recession- at 32 years		-0.031
		(0.019)
College	-0.006	-0.006
	(0.015)	(0.015)
Married	-0.041***	-0.041***
	(0.010)	(0.010)
Male	0.078***	0.078***
	(0.010)	(0.010)
Unemployed	0.049**	0.050**
	(0.020)	(0.020)
Black	0.148***	0.149***
	(0.017)	(0.017)
Log (pers. income)	-0.004*	-0.004*
	(0.002)	(0.002)
Log (fam. income at 18)	-0.024***	-0.023***
	(0.009)	(0.009)
Father less high school	0.005	0.005
	(0.010)	(0.010)
Academic	-0.031***	-0.031***
	(0.009)	(0.009)
Grade	-0.003***	-0.003***
	(0.001)	(0.001)
Working in high school	-0.003***	-0.003***
	(0.000)	(0.000)
State fixed effects	Yes	yes
Year fixed effects	Yes	yes
Observations	23833	23833
R-squared	0.03	0.03

Notes: [1] Standard errors are clustered at the state*year level; *
significant at 10%, ** significant at 5%, *** significant at 1%

Table 7
NLS72: Interactions with Personal Background

	(1) Work-luck	(2) Work-luck	(3) Work-luck	(4) Work-luck	(5) Work-luck	(6) Work-luck	(7) Work-luck
Unempl.- imp. years	0.016***	0.016***	0.018***	0.017***	0.020***	0.061***	0.018***
	(0.005)	(0.005)	(0.007)	(0.005)	(0.005)	(0.018)	(0.005)
Unempl. – at 32 years	-0.001	-0.002	-0.002	-0.002	-0.001	-0.002	-0.002
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Black*(unem. i.y.)	0.010*						
	(0.006)						
Black	0.098***						
	(0.033)						
Male*(unem. i.y.)		0.003					
		(0.003)					
Male		0.063***					
		(0.018)					
Log(fam. inc. at 18)*(un. i.y.)			-0.001				
			(0.003)				
Log(fam. inc. at 18)			-0.016				
			(0.019)				
(Father less h.s.)*(un. i.y.)				0.001			
				(0.003)			
Father less high school				-0.000			
				(0.018)			
Academic*(un. i.y.)					-0.006*		
					(0.003)		
Academic					-0.002		
					(0.016)		
Grade*(un. i.y.)						-0.001***	
						(0.000)	
Grade						-0.000	
						(0.001)	
(Working h.s.)*(un. i.y.)							-0.000
							(0.000)
Work							-0.003***
							(0.001)
State fixed effects	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes
Observations	23833	23833	23833	23833	23833	23833	23833
R-squared	0.03	0.03	0.03	0.03	0.03	0.03	0.03

Notes: [1] Standard errors are clustered at the state*year level; * significant at 10%, ** significant at 5%, *** significant at 1%

Table 8
NLS72: Interactions with Personal Experience during Impressionable Years

	(1) Work-luck	(2) Work-luck	(3) Work-luck	(4) Work-luck
Unemployment imp. years	0.018***	0.018***	0.019***	0.032***
	(0.005)	(0.005)	(0.005)	(0.009)
Unemployment at 32 years	-0.002	-0.002	-0.002	-0.002
	(0.004)	(0.004)	(0.004)	(0.004)
Unemployed*(unempl. i.y.)	-0.007			
	(0.007)			
Unemployed	0.087*			
	(0.046)			
College*(unempl. i.y.)		-0.009**		
		(0.004)		
College		0.023		
		(0.018)		
Married*(unemp. i.y.)			-0.004	
			(0.003)	
Married			-0.018	
			(0.021)	
Log(pers. income)*(unemp. i.y.)				-0.002**
				(0.001)
Log(pers. income)				0.005
				(0.005)
State fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Observations	23833	23833	23833	23833
R-squared	0.03	0.03	0.03	0.03

Notes: [1] Standard errors are clustered at the state*year level; * significant at 10%, ** significant at 5%, *** significant at 1%