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Beliefs and the Macroeconomy**

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ABSTRACT

Growing Up in a Recession: Beliefs and the Macroeconomy^{*}

Do generations growing up during recessions have different socio-economic beliefs than generations growing up in good times? We study the relationship between recessions and beliefs by matching macroeconomic shocks during early adulthood with self-reported answers from the General Social Survey. Using time and regional variations in macroeconomic conditions to identify the effect of recessions on beliefs, we show that individuals growing up during recessions tend to believe that success in life depends more on luck than on effort, support more government redistribution, but are less confident in public institutions. Moreover, we find that recessions have a long-lasting effect on individuals' beliefs.

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“Traumatic events are seared into the collective consciousness and often survive into the next generations.”

Toni Pierenkemper, University of Cologne

“I went into economics for two reasons. One was that as a child of the great Depression I was terribly concerned about the world. Many of the problems were economic in origin...”

James Tobin, *Conversations with Economists*

1. Introduction

Do macroeconomic shocks have a long-lasting effect on economic beliefs and values? Did Germans growing up during the hyperinflation become adverse to inflation forever? Did Americans living through the Great Depression become systematically more risk adverse and more favorable toward Social Security? Did Latin Americans coming of age in a period of trade shocks favor protectionist policies? Will the current financial and economic crises leave a mark on beliefs?² Anecdotal evidence suggests that, indeed, difficult times leave a mark on an individual’s beliefs and attitudes, but no systematic analysis is available so far.³

This paper fills this gap by matching self-reported individuals’ beliefs and attitudes with their macroeconomic experience during early adulthood for a large sample in the U.S. Drawing from research in social psychology, we consider in particular the so-called formative years, defined as the age between 18 and 25, during which most beliefs on how society and the economy work are formed.⁴ We find that individuals experiencing recessions during the formative years believe that luck rather than effort is the most important driver of individual success, support more government redistribution, and have less confidence in institutions.

Economists have long recognized the role of economic beliefs in determining the economic system and institutional outcomes, especially the difference in the role of the government across countries. For instance, Piketty (1995) shows that people who believe that high personal income is mostly due to luck rather than hard work are more willing to increase taxes. Given that the choice of taxes can reinforce these beliefs, two countries with a similar starting position can converge to two very different equilibria, one based on luck and high taxes (the so-called French equilibrium) and

² For instance, in a *Financial Times*’ comment on Tuesday, February 27 2009, Gideon Rachman speculates that the current financial crisis will have consequences on the political climate.

³ From the *New York Times*, October 28, 2008: “‘I haven’t forgotten history,’ says Gert Heinz, a tax adviser in Munich. ‘If you depend on paper money you can lose everything. We’ve learned that the hard way after two world wars.’ So when Chancellor Angela Merkel went on television recently to tell Germans that their bank accounts were safe, Mr. Heinz, who at 68 still remembers the rows of canned food that his mother hoarded in the attic, decided he would rather be safe than sorry.”

⁴ See Krosnick and Alwin (1989)

one based on effort and low taxes (the so-called American equilibrium). Similarly, Alesina and Angeletos (2005) show that the interaction between a belief in fairness and welfare policies can explain the existence of multiple equilibria. Benabou and Tirole (2006) also present a model to explain why people need to believe in a “just world,” why these beliefs change a lot across countries, and what the implications are in terms of levels of redistribution, labor supply, aggregate income, and popular perception of the poor. Their model leads to two equilibria, an “American” equilibrium with laissez-faire policies and just-world beliefs; and a ‘European’ equilibrium with social welfare and a more pessimistic view about how just the world is.

Despite the crucial role of beliefs in explaining institutional outcomes, there is still a lot of uncertainty about how beliefs are formed and change. There seem to be two extreme views: one that beliefs are engrained in culture and change extremely slowly, the second one that beliefs are largely determined by present conditions. According to the first view, beliefs, which are part of the national culture, are basically predetermined and are very slow moving; current events, including economic crises, have limited impact on beliefs. In addition, beliefs and attitudes would help in forming institutions, which in turn validate these beliefs, making them even more persistent (Piketty 1995).⁵ According to the opposite view, individuals’ experiences or factor endowments have a strong impact on beliefs. For instance, the communist regime that existed in Eastern Germany before 1990 has had an impact on the preferences for redistribution of East Germans (Alesina and Fuchs-Schündeln 2008); more generally, the experience of socialism seems to have increased the preference for redistribution (Murthi and Tiongson 2008). Similarly, the redistribution of land changed the preferences of squatters in Buenos Aires almost overnight (Di Tella, Galiani, and Schargrosky 2007). In this view, preferences change within one or two generations (Alesina and Fuchs-Schündeln 2008) or almost instantly if the endowments are changed (Di Tella, Galiani, and Schargrosky 2007).⁶

This paper investigates an intermediate position, which is closer to the current findings by social psychologists. Beliefs are formed mostly during early adulthood and change slowly past this critical age. Our analysis of beliefs formation is based on two hypotheses proposed in social psychology. First, the *impressionable years hypothesis* (hereafter *IYH*), which states that core attitudes, beliefs, and values crystallize during a period of great mental “plasticity” in early adulthood and remain largely unaltered throughout the remaining adult years. In particular, the *IYH* maintains that there is a sensitive socialization period in the lives of individuals during which socializing influences

⁵ Alford et al. (2006) have even found some evidence that “genetics play an important role in shaping political attitudes and ideologies.”

⁶ Note that Boycko (1992) and others find that the attitudes depend largely on situation: even after many decades of propaganda, there was no ‘homo sovieticus.’

have the most profound impact, such that values, attitudes and world-views acquired during this time become fixed within individuals and are resistant to change. Once the period of early socialization has passed, the core orientations are unlikely to change. Evidence of significant socialization has been found between 18 and 25 years of age (Krosnick and Alwin 1989). Second, the *increasing persistence hypothesis* (hereafter *IPH*), which suggests that individuals are flexible and responsive to social circumstances when they are young, but as they age their flexibility gradually decreases.⁷ Both hypotheses have similar predictions that belief formation happens mostly during adolescence and early adulthood and fades with age.⁸

Our paper is also motivated by the fact that we do observe changes in collective national beliefs and attitudes at frequencies that are not compatible with the view that beliefs and attitudes change only slowly. Take the example of France, which is often mentioned as a country with a system of beliefs and attitudes rooted in long-term historical experience (e.g. the Gaul spirit of Asterix would set France apart from the Anglo-Saxon world). According to this view, Frenchmen would stalwartly oppose the market economy and would prefer the heavy involvement of the state. However, at the beginning of twentieth century, France was as capitalist as the UK or the United States; with a market value of 78 percent of GDP, the Bourse de Paris was the symbol of capitalism more than the closed economy of the US, whose stock market accounted for only 38 percent of GDP (Landier and Thesmar 2007). After the Great Depression and the experience of World War II, the beliefs and the attitudes of Frenchmen changed and they grew to mistrust capitalism.

Our paper is mainly related to the empirical literature on the determinants of beliefs. This literature has studied the impact of endowment on beliefs (Di Tella, Galiani, and Schargrosky 2007)⁹, the relationship between crime and beliefs (Di Tella, Donna and McCulloch 2007) and the relationship between dependency on oil and individualism (Di Tella, Dubra and McCulloch 2008). Di Tella and MacCulloch (2007) also look at the importance of dependency on oil and macroeconomic volatility to move the electorate in Venezuela; and Alesina and Fuchs-Schuendeln (2008) focus on the importance of political ideology in shaping preferences for redistribution.

⁷ 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).

⁸ In contrast, the *life-long openness hypothesis* maintains that individuals are highly flexible throughout their lives and constantly alter their attitudes in response to changing life circumstances (Brim and Kagan 1980).

⁹ 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.

This paper is also related to the literature on the implications of macroeconomic shocks on economic outcomes. In addition to the effect on beliefs, shocks may indeed have long-lasting effects on labor market experience or participation into the stock market. For instance, young graduates entering the labor market in a recession suffer significant initial earning losses that either eventually fade (Oreopoulos et al. 2006) or become permanent (Kahn 2008). Several papers in corporate finance look at the importance of recent returns on young investors in the 1990s (Greenwood and Nagel 2008 and Vissing-Jorgensen 2002). Malmendier and Nagel (2007) test whether differences in individuals' experiences of macroeconomic shocks affect stock market participation and the fraction of wealth that individuals are willing to invest in stocks. In a similar vein, Graham and Narasimhan (2004) find that corporate managers who lived during the Great Depression choose a more conservative capital structure.

Our analysis uses data from the General Social Survey, which provides repeated cross-sections over a thirty-year period with information on economic beliefs, demographic characteristics as well as location and economic conditions of subjects when they were teenagers.¹⁰ Among various possible beliefs, we focus on the attitudes toward work and individual effort, government redistribution and confidence in government. We choose these variables because they are related to the fields of interest for macroeconomists: labor supply and effort, the role of government and trust in institutions. We use the other demographic variables, including marital status, employment status, sex, age, religion, educational level, and family income as control variables.

The key challenge in any study of belief formation is the appropriate control of omitted variables, which could be correlated with macroeconomic shocks. 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 the effects 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 for the U.S.

Using the information on the location of respondents during critical age (the GSS provides location of respondent at age 16), we construct variables on regional economic shocks during critical age. For instance, we consider economic shocks in New England in the sixties for an individual who was living in Boston at the age of 16, even if she is currently living in another macro region. In such a way, the shocks are time- and location-specific.

¹⁰ See the data section for a more detailed description.

The paper is organized as follows. Section 2 describes the data and the empirical strategy, Sections 3 and 4 discuss empirical results and robustness checks, respectively. Section 5 concludes.

2. Data and Methodology

Data

Our data on beliefs and individuals' demographic status comes from the General Social Survey (hereafter GSS), which conducts basic scientific research on the structure and development of American society with a data-collection program designed to monitor social changes within the United States. The GSS contains a standard set of behavioral and attitudinal questions, many of which have remained unchanged since 1972.¹¹ The GSS also contains background information on each individual, including religion, family income, parents' education and location when the individual was 16. The survey is a nationally representative sample of about 1,500 respondents each year from 1972 to 1993 (with the exception of 1992) and which continues with around 3,000 respondents every second year from 1994 to 2004, rising to 4,500 respondents in 2006. We use all the data available from 1972 to 2006. Descriptive statistics for our sample are presented in Table 1.

Motivated by the recent theoretical literature on beliefs discussed above, we focus on the following three sets of attitudes:

1. **Preferences for government redistribution**, based on the following two questions: *"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 variable is indicated as "help poor" in the regression tables) and *"Some people think that the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor (they are at point 7 on this card). Others think that the government should not concern itself with reducing these income differences between the rich and the poor (they are at point 1 on this card). What score between 1 and 7 comes closest to the way you feel?"* (this variable is called "income inequality" in the regression tables).
2. **Attitudes toward the importance of work versus luck as a driver of success in life**, based on the following question *"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?"* Hard work (1), luck (3) or equally important (2).

¹¹ For detailed information on the GSS see: <http://www.norc.og/GSS+Website/>.

3. **Confidence in the government**, based on the following question: *“I am going to name some institutions in this country. As far as the people running these institutions are concerned, would you say you have a great deal of confidence (3), only some confidence (2), or hardly any confidence at all in them (1)”*. The institutions we consider are the executive branch of the federal government and the Congress.

Methodology

The goal of our work is to identify how macroeconomic shocks during one’s formative age influence his or her beliefs later in life. In our baseline regressions we use regional recessions as a measure of macroeconomic shocks, but we also analyze the importance of other macroeconomic events such as volatility, booms, and the simple average of regional GDP growth.

We consider regional recessions (as opposed to state recessions) because the GSS contains information on the macro regions (but not on single states) in which the person was living when he or she was 16, allowing us to match every individual interview with the macroeconomic shock in the region where the person was living during his or her youth.¹² Regional recessions are defined using the gross state product, i.e. GDP, at the regional level. This series, constructed from the Bureau of Economic Analysis, is available at the regional level starting from 1963.¹³

Our variable of interest is a variable equal to 1 if the individual experienced at least one year in which the regional GDP growth was lower than -3.8% during her “impressionable years.” This threshold represents the lowest 5th percentile of the GDP growth distribution for the 9 regions in the US for the period 1963 to 2006. We choose the lowest 5th percentile rather than simply negative GDP growth, because 84% of the individuals experienced at least one year of negative growth during their critical age period, therefore a shock simply defined as negative growth would not have given enough variation. We test the robustness of our results using additional measures of regional macroeconomic differences.

In addition to recessions, we define a measure of time spent in recessions as the fraction of years spent in recessions during the impressionable years to see whether the duration and not only

¹² 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).

¹³ By comparison, regional unemployment is available only from 1968.

the depth of the shocks is relevant. We also define a measure of boom, consistent with the measure of recession, as a variable equal to 1 if the individual experienced at least one year in which the regional GDP growth was higher than 6.5% (the 5th highest percentile in the GDP growth distribution) during her impressionable years. We do this in order to test possible asymmetries in the way macroeconomic shocks could affect beliefs. Finally, we use the simple average of GDP growth as a generic measure of economic conditions in the region and the standard deviation of GDP growth during the impressionable years. If subjects dislike uncertainty in the macroeconomic environment, volatility could make them more pro-government redistribution and more likely to believe in the importance of luck in achieving success. Figures 1-5 show the shocks to which individuals are subject during their impressionable years by year of birth and region of residence at age 16. For instance, the top left panel of Figure 1 shows the probability of having gone through a recession for at least one year during the impressionable years for individuals living in New England for each year of birth; the other panels show the same variable for different macro-regions.

From Figures 1-5, it is apparent that the macroeconomic experiences of individuals living in different regions during their impressionable years could have been quite different. For example, the cohorts born around 1950 were subject to at least one year of recession if they were living in New England, East North Central and West North Central, but not in the other regions (Figure 1). Similarly, the cohorts born between 1970 and 1980 in the Pacific region spent most of their impressionable years (from 60 to 80 percent) in a recession. This fraction was around 20% for the young adults spending their impressionable years in the West South Central or the Mountain Regions. Volatility during the impressionable years tends also to be very different across regions. It changes mildly for New England, the Middle Atlantic and South Atlantic Regions; it declines a lot for cohorts born between the 1950 and the 1970 in the West North Central Region, whereas it increases a lot for the Pacific Region during the sample period. The incomplete synchronization of business cycles between the nine regions and the US as a whole ensure enough variation for our identification strategy. For reference, Figure 6 shows the same definitions of shock at the national level to illustrate that regions had business cycles that did not necessarily overlap with the national one.¹⁴

Our baseline specification is as follows:

$$Beliefs_{irt} = \alpha_0 + \alpha_1 macro\ shock_{r16} + \alpha_2 X_i + \delta_r + \eta_t + \gamma_{r16} + \delta_r \eta_t + \varepsilon_{irt}$$

¹⁴ Note that for the entire United States the values of the 5th lowest and highest percentile of GDP growth are respectively: -1.4% and 5%.

where $Beliefs_{irt}$ indicates the response to one of the questions described above of individual i , interviewed at time t in region r . The variable $macro\ shock_{r16}$ is the shock in the region where the individual was living between 18 and 25 (with the subscript $r16$ indicating the region where the person was living at age 16). We match the macroeconomic shock to the region k in which the person was living when she was 16. Note that we do not have the region of residence for each year of an individual's life; therefore, we continue to use as a reference point the region of residence at age 16 for the whole 18-25 range. This introduces some noise, which is likely to attenuate the estimated effects. X_i are individual controls to be described below. We also 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.¹⁵ In the most demanding specification, we also include all the region*year interactions ($\delta_r\eta_t$) to take into account all possible time varying regional covariates.

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 experience different shocks over the years. As pointed out in the description of the data, various regions experience substantially different macroeconomic cycles, which do not always overlap with the national cycle. For instance, in the mid 80s, four macro regions experienced recession while the country as a whole was growing. In contrast, in 2001 one macro region avoided recession while the rest of the country experienced negative income growth. As a corollary, it follows that our estimations, which use only the region-specific shock, provide a lower bound of the effects of macroeconomics on beliefs because we control for the national cycle¹⁶.

Second, by using interview year fixed effects we control for the common recent *national* history. We also control for the interaction between regional fixed effects and fixed effects for the year of the interview, controlling for recent *regional* history.

Third, macroeconomic shocks may also have an effect on an individuals' endowment as economic conditions may have an effect on education and on health (Dehejia and Muney 2004). Individual endowments, in turn, are known to be an important variable in explaining the formation

¹⁵ The current region does not correspond necessarily to the region $r16$ in which the individual grew up, as individuals may have moved.

¹⁶ Kahn (2007) shows that local as well as national macroeconomic conditions are important for the determination of labor market outcomes of students graduating in a recession.

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 endowments. In order to control for the endowment effect, we introduce individual characteristics at the time of the interview, including education, income, employment status, which may have been influenced by the macroeconomic shock during formative age.

All regressions are estimated using OLS for ease of interpretation, but similar results are obtained with ordered logit. Tables 2-6 report the results for the beliefs on the role of the government, the role of luck versus effort as a driver of success, and confidence in the Congress and the executive branch of the federal government.

We run four specifications for each belief. All specifications include current region and interview year 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. Specification (1) adds basic demographics (sex, race and a quadratic in age), which do not depend on the recession, to the aforementioned fixed effects. Specification (2) adds employment and marital status, education, religious denomination and family income; all these variables may have been influenced by a recession during the formative years. Specification (2) controls for the endowment channel and, so, aims at measuring the direct effect. Specification (3) includes a very flexible specification to control for income (we include 12 fixed effects for income brackets). Finally, specification (4) adds a rich set of controls on the status of the person when she was 16. These controls include the religion in which the individual was raised, the income of the family when the person was 16, a variable indicating whether the person was living with the family or not, father's education and family income. These variables are meant to capture individual characteristics, which could be correlated with frequency of regional economic shocks.¹⁷ In addition, we also include all interactions between region and (interview or current) year effects in order to take into account all possible region- and time-varying covariates. This is the richest and most demanding specification and is the basis for all robustness checks.

3. Results

¹⁷ Note that the fact that some regions always experience more macroeconomic shocks because of their specialization (for instance, the fact that regions specialized in agriculture may experience more volatile income) is already captured by the regional fixed effects in all specifications. Specification (4) is more demanding because it also controls for time-variant individual characteristics that could be correlated with frequency of regional shocks and so drive the results with a spurious correlation (for instance, the fact that unskilled labor could be *increasingly* concentrated in regions that experience macroeconomic shocks).

Preferences for redistribution

Tables 2 and 3 report the regressions with the beliefs about the role of the government as dependent variable. A positive coefficient means a higher preference for government redistribution (a higher number means that the government should take care of people in need in the “help poor” regression and a preference for less inequality in the “income inequality” regression). The coefficient on the variable indicating whether the person experienced a recession during her impressionable years is significant at least at the 10 percent level in all the specifications. Experiencing a recession during the impressionable years can explain about 4 percent of the variation of preferences for redistribution. By comparison, the effect of having gone through a recession is equivalent to half of the effect of being employed, and one third of the effect of having completed only high school (as compared with people with college education and beyond). Consistent with the literature, employed, educated, married, Protestant, male, and high income-earning individuals are less favorable to redistribution. Race is an important factor in determining individual preferences (see also Alesina and La Ferrara 2005). Family background at age 16 is relevant in the determination of preferences for redistribution. In particular, having a father with a low level of education or being poor increases people’s desire for redistribution. Being raised Protestant appears also to be relevant but only for one of the two variables.

Importance of luck versus effort as a driver of success in life

Table 4 presents the regressions for the belief about the relative importance of work (lower number on a scale of one to three) versus luck (higher number) as a determinant of individual success. A recession during impressionable years makes an individual more inclined to believe that luck is the fundamental driver of success. Recessions can explain about 4 percent of a standard deviation of this variable, which is half the impact of being unemployed. The coefficient is significant at the 10 percent level when we include all the family background controls (column 4). Being Protestant or being raised Protestant is an important determinant of this belief, consistent with the Weberian interpretation on the importance of work. In addition, married and high family income individuals tend to believe that individual success depends on hard work, while black and unemployed individuals report that luck is more important in explaining success in life.¹⁸

Trust in institutions

¹⁸ Note that the coefficients for employment and education have opposite signs in the regressions of Tables 3 and 4, confirming that employment and education have different effect on beliefs.

Tables 5 and 6 present the results for regressions in which the dependent variable is trust in Congress and the executive branch of the federal government. A higher level of the dependent variable means that the individual has high trust in that institution. People hit by a negative macroeconomic shock have a significantly lower level of confidence in Congress and the executive branch of the federal government. Being Catholic or Protestant or being raised as such substantially increases confidence in the government. As with the previous variables, being in a recession can explain about 4 percent of the variation in the confidence in institutions, but in this case the impact is equivalent to having an education up to and including high school (compared to people with some college or more). Finally, the results do not change even controlling for income and for a large set of family controls during the critical age (specification 4). In other words, the results are not driven by personal endowments during a recession.

Political attitudes

All beliefs discussed above could also be important in the broad determination of ideology. In particular, the experience of a recession during critical age with the resulting preference for greater state involvement could move individuals toward a more left leaning orientation. To see whether the impact of the macroeconomic shock is also relevant for a broader measure of political orientation, Table 7 reports the results for the ideological self-placement. The dependent variable is normalized so that a higher number (in a scale ranging from one to seven) indicates a (self-assessed) liberal placement, while a lower number indicates a (self-assessed) conservative placement. Being in a recession during one's formative years does not seem to play a role in ideological self-placement. This could be consistent with the fact that recession-stricken individuals on the one hand ask for larger involvement by the state in redistribution (Table 2) but, at the same time, are more skeptical of the state institutions' ability to intervene effectively (Tables 5 and 6). This contradiction between the requests from the state and the confidence in it could offset each other, nullifying the effect on political self-placement. In addition, this could be in line with recent evidence showing that political preferences are mostly culturally transmitted from parents to children, possibly even including a genetic component (see Alford et al. 2006).

Consistent with the literature, our results also show that males, married individuals, people out of the labor force, and high family income individuals tend to be more conservative, together with Catholics and Protestants. Higher education is associated with a more left wing ideology.

Psychological profile of individuals hit by a recession during their impressionable years

In comparison with other individuals, those who experience a recession during their impressionable years are more likely to believe that individual success is driven more by luck than hard work (Table 4), hence they prefer more government redistribution (Tables 2 and 3). This empirical finding confirms the intuition provided in Benabou and Tirole (2006) that individuals who believe in a just world in which success is driven mostly by hard work and not by the vagaries of luck do not want the government to engage in redistribution.¹⁹ However, recession-hit cohorts have less confidence in the executive and legislative branches of the government (Tables 5 and 6). This is consistent with the idea that individuals were asking (or hoping) for more government services and, in particular, redistribution, but they lost the confidence in the abilities of institutions to deliver these services. Mistrust in executive and legislative institutions, which are expected to act during a recession, is higher in recession-hit cohorts. Finally, a recession-hit cohort has mixed feeling regarding political self-placement: On the one hand, recession-hit individuals believe that the government should intervene more, so they lean more to the left. On the other hand, these individuals distrust institutions, believing them to be ineffective, therefore leaning more right. The overall result of these two tendencies is that there is no clear effect of recession during formative age on self-reported political placement.

4. Robustness

This section focuses on the robustness of the results with respect to omitted variables, different definitions of formative age, different definitions of shocks, restricting the sample to non-movers, and taking into account the dominant ideology during the critical age.

Omitted variables

The results discussed above could be the results of omitted variables correlated to beliefs and to the local shocks. However, the results above do not depend on any nationwide time effect (every specification controls for time specific effects), region of current residence time-invariant characteristics (every specification has regional fixed effects for the region of residence) or region of residence during critical age time-invariant characteristic (every specification has fixed effects for region of residency at age 16). These results are also robust to the inclusion of region-specific fixed

¹⁹ Note, however, that Benabou and Tirole (2006) looked not just at different countries, but different continents: the “American” versus the “European” systems of beliefs in the world’s justice and the role of the state. By contrast, our empirical analysis is based on comparison between American cohorts that simply had different experiences during their formative ages.

effects with and without controls for some individual characteristics. Finally, our main specification includes background characteristics during critical age in addition to all other controls and a very flexible specification for income.

Impressionable years versus other years

Following the socio-psychological literature, our analysis has focused on the role of impressionable years (between 18 and 25) in the formation of beliefs (Mannheim 1952; Krosnick and Awin 1989). However, a legitimate question is if any experience of macro shocks, regardless of age, could change beliefs and attitudes. As mentioned in the introduction, one alternative theory to the impressionable year hypothesis claims that sensitivity to events declines with age, while another one claims that individuals are highly flexible throughout their lives and constantly alter their attitudes in response to changing life circumstances.

In order to compare the importance of impressionable years versus other periods of life, we repeat our basic regressions as in specification (4) in tables 2 through 7 based on different intervals of years (10-17, 26-33, 34-41, 42-49 and 50-57).²⁰ Table 8 reports the coefficients on the variable indicating whether the individual experienced at least one recession at different ages.²¹ Being exposed to a recession before the age of 17 or after age 25 has 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, with the notable exception of confidence in the government, for which experience of shocks during formative age as well as slightly later in life are both relevant. This is consistent with the view that the experience during formative age has a crucial role in determining the “primitive beliefs” on big issues such as the general role of the government with respect to individuals and the role of individual’s effort in the determination of success in life.

Impressionable years versus recent years

Another set of theories stresses how individuals discount experiences far back in the past and overweigh recent experiences. In order to test this hypothesis against the hypothesis of impressionable years, we repeat our baseline regression (specification 4 in Tables 2 to 7), introducing a variable “recession during the last eight years” measured in the same way as the recession during formative age. Table 9 reports the coefficients of interest for the relevant regressions. There is no

²⁰ We chose the intervals of equal length in order to be consistent with the impressionable years range. Note that our sample size decreases slightly as we increase the range period. We report in the same table the results for the 18-25 years range for comparison.

²¹ We do not report the coefficients on the remaining controls, but complete results are available from the authors.

evidence that recent experience of recession has any impact on beliefs, while the results on the recession during the critical age remain valid.²²

Alternative definitions of shocks

In this section we test the robustness of our results to alternative definitions of macroeconomic outcomes (Table 10 reports the results using specification (4) of Table 2 for each of the alternative definitions). First, instead of defining the variable as equal to 1 for at least one year of recession during the critical age, we define the fraction of time that each individual spent in recessions during her impressionable years. In this case, we define recession simply as a negative GDP growth, since deep recessions with GDP growth lower than -3.8% very rarely last more than one year. The results (first panel of Table 10) confirm the role of the experience earlier in life in belief formations, although spending more years in negative GDP growth has slightly weaker effects than being exposed to a deep recession.

Second, we also look at the effects of large booms defined as regional GDP growth larger than 6.5% (the 5th highest percentile in the income distribution). Contrary to what we found above for recessions, the experience of a boom during the formative age does not seem to matter for the formation of beliefs (second panel of Table 10).

Third, instead of using a specific definition of recession, we simply include the average GDP growth during the impressionable period. Higher growth is associated with less desire for redistribution, more importance attributed to effort as a driver of success and more confidence in institutions. The results are somewhat weaker than being exposed to a deep negative shock, indicating that economic growth has a nonlinear effect on beliefs (third panel of Table 10).

Finally, we consider the standard deviation of GDP growth during the impressionable years. People might dislike uncertainty as measured by volatility, so we would expect this variable to produce the same results as the experience of a recession²³. The results indeed confirm this story. The effects of volatility are somewhat weaker than a deep recession (fourth panel of Table 10). Overall, these results indicate that a deep negative shock seems to have the stronger effect in the formation of beliefs. Spending long period of time in an unfavorable or very volatile economic environment also increases the desire for redistribution and lowers the confidence in institutions. Experiencing higher growth during the formative years has the opposite effect.

²² Note that in this case we include only region at age 16 and year fixed effects, as region of residence fixed effects and all the interaction with year fixed effects would be perfectly collinear to our variable on recession in the last eight years.

²³ Wolfers (2003) finds evidence that macroeconomic volatility reduces happiness.

Restricting the sample to non-movers

Individuals may react differently to macroeconomic shocks. In particular, economic crises are known to be important push factors in shaping migration decisions (Greenwood 1975). This can pose an econometric problem. If individuals are heterogeneous in their response to local shocks, with more entrepreneurial individuals moving to a new location, the estimation could suffer from heterogeneity in the sample. In order to have a more homogeneous sample, we replicate specification (4) in Tables 2 to 7 restricting the sample to non-movers.

The coefficients reported in Table 11 are similar to the coefficients obtained in the regressions using the entire sample, indicating that heterogeneity in the sample is not a major issue.

Dominant ideology during youth

Preferences for the role of the government could be determined by the ideological position of the main political leader during the impressionable years. Having a president particularly sensitive to redistributive issues, for example, could have left a mark in individuals' views about the role of the government in the economy (for instance, individuals growing up during the Reagan-Bush presidencies could be more conservative than individuals growing up during the Kennedy-Johnson presidencies). To answer this question, we introduce a variable indicating the fraction of years under a democratic president during the critical period. The results of these regressions are reported in Table 12. The dominant ideology does not influence the impact of regional recessions on individual beliefs and has normally no significant effect on them, with the exception of the role of work versus luck as a driver of success, preferences for income inequality and confidence in the executive branch of the federal government.

Heterogeneity of the coefficients depending on initial individuals' conditions

The analysis so far has considered that all individuals respond in the same way to recessions during their impressionable years. However, initial conditions during early adulthood, including income, level of education of the parents, an individual's own level of education and social mobility (measured as difference between parents' and the individual's level of education) may influence how macroeconomic conditions impact one's beliefs. In order to test this possibility, we modify our baseline specification (Table 2 column 4) to include an interaction term between recessions during critical age and different initial characteristics. Table 13 reports the results for the parameters of interest (recession, initial condition, and their interaction).

Overall, our main results on beliefs hold and there is little evidence that heterogeneity in initial conditions plays an important role. A noticeable exception is the effect of heterogeneity on the impact of recessions on the beliefs of what determines success in life.

Counterfactuals – placebo regressions

Differences in macroeconomic experiences during formative age should matter only for economic and political beliefs and not for other types of beliefs. Using this intuition, we replicate our baseline framework using a set of beliefs concerning spiritual life or attitudes toward homosexuality (as a proxy of other types of liberal beliefs) as dependent variables. In particular we choose as first belief the feelings about the image of the world (possible answers on a scale of 1 to 7 are: “world is filled with sin (1), there is much goodness, which hints at God’s goodness (7)”). We also use a variety of beliefs about homosexuality; in particular the variable *homosexuality* asks the respondents whether homosexual sex relations are always wrong (1), almost always wrong (2), sometimes wrong (3) and not wrong at all (4). We also use two additional variables asking the respondent whether she believes that homosexuals should be allowed to speak or teach (with the answer to each question taking the value of one if homosexuals should be allowed and zero otherwise). For each of these variables we follow the main specification of this paper. Table 14 presents the results.

Experiencing a recession has no significant impact on other types of liberal versus conservative beliefs or beliefs concerning the spiritual life. By contrast, other individual variables have a strong and expected impact on this type of beliefs. For instance, black, male, Catholic, Protestant or married individuals with a low level of education (or with a poor educational background) tend to be more conservative in their attitudes about homosexuality.

Mistrust in the government and lack of generalized trust

One of the strongest results of our paper is the long-lasting effect of recessions on confidence in government. A natural question would then be if this lack of confidence in the government has a spillover effect on generalized trust. We run our main specification using trust as variable of interest (Table 15). The trust variable is the answer to the following question: “Generally speaking, would you say that most people can be trusted (taking the value of 1) or that you can’t be too careful in life (taking the value of 0)”. While recessions substantially decrease the confidence in government institutions, they do not have an effect on the level of generalized trust, which therefore does not depend on macroeconomic outcomes.

5. Conclusions

In this paper, we study the permanent effect of macroeconomic shocks on the formation of beliefs. We study the relationship between recessions and the formation of beliefs by matching self-reported individual answers with macroeconomic experience during youth. We use information from the General Social Survey and variation in regional and yearly macroeconomic conditions to identify these effects. We find that the period of early adulthood (between 18 and 25) seems to be the age range during which people are more sensitive to macroeconomic conditions. Macroeconomic shocks also may affect people's trust in government institutions until they are in their 40s. People tend not to change beliefs in response to negative economic shocks experienced when they are 40 or older.

We contribute to the literature on the determinants of beliefs in three ways. First, we study the importance of macroeconomic events in the formation of socio-economic beliefs (a topic not yet studied in the literature). Second, we focus explicitly on the importance of the “impressionable years,” not only on recent experience or an individual's entire history. Third, we use time-varying regional shocks to identify the impact of macroeconomic shocks on beliefs. More generally, this paper sheds light on the importance of the historical economic environment in shaping economic attitudes. It follows a line of thought that goes back to Durkheim (1897), who showed how suicide, which up to that period was considered a purely individual action, was related to general social and economic conditions. In a similar vein, we argue that the system of individual beliefs and attitudes is conditioned by the collective experience of a recession. The findings in this paper also provide firm empirical grounds for the models that endogenize political preferences and beliefs (Piketty 1995; Benabou and Tirole 2006).

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Figure 1
Macroeconomic events during the “impressionable years”- At least one recession

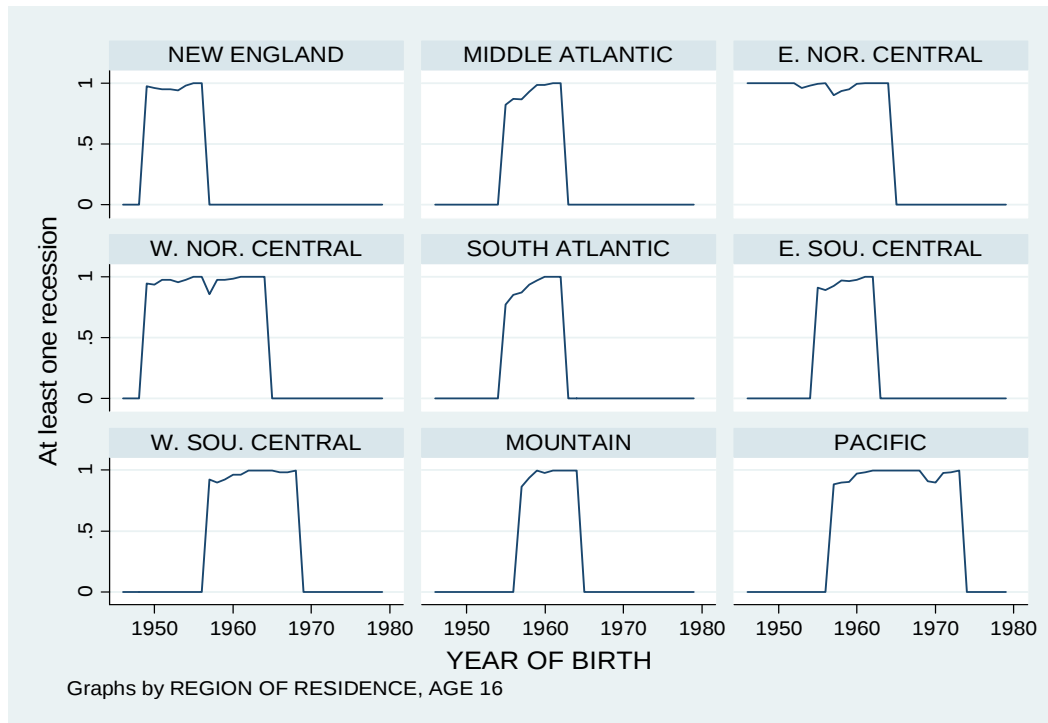


Figure 2
Macroeconomic events during the “impressionable years”- Average years of recession

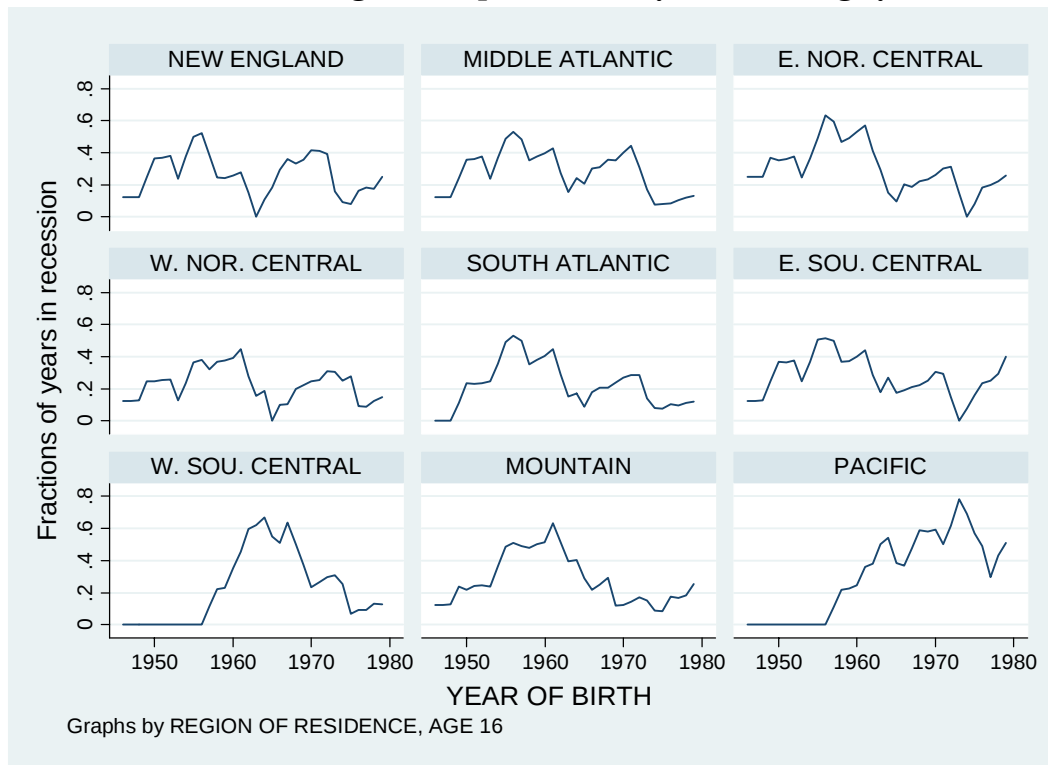


Figure 3
Macroeconomic events during the “impressionable years”- At least one boom

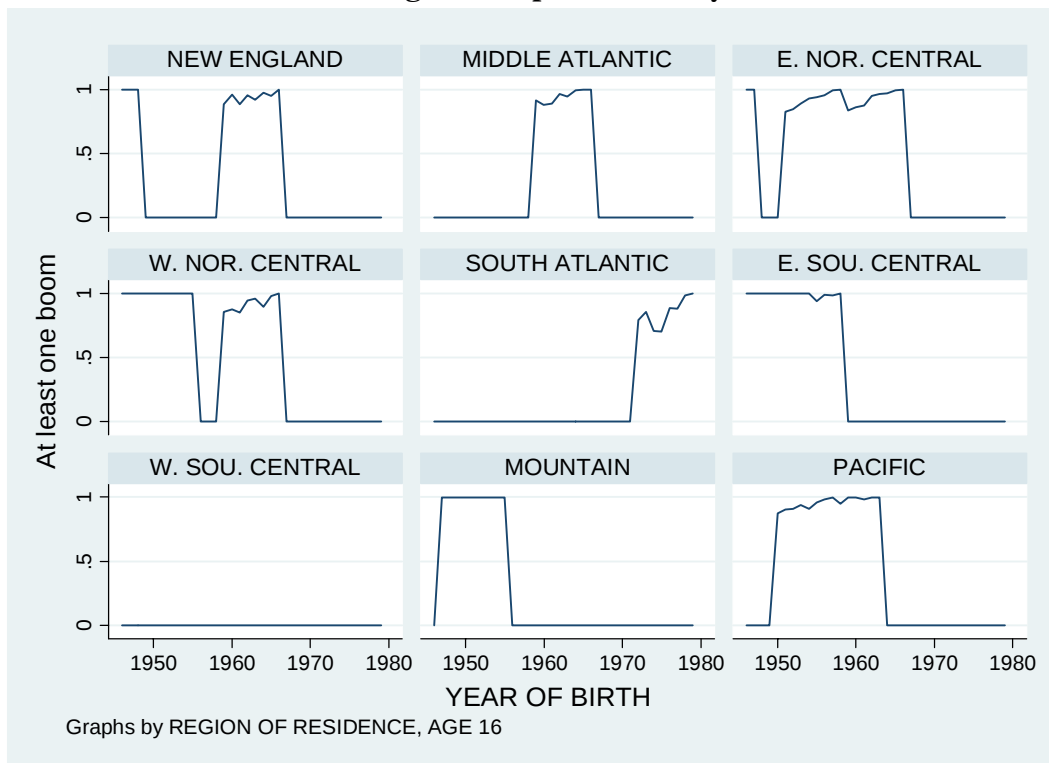


Figure 4
Macroeconomic events during the “impressionable years”- Average regional GDP

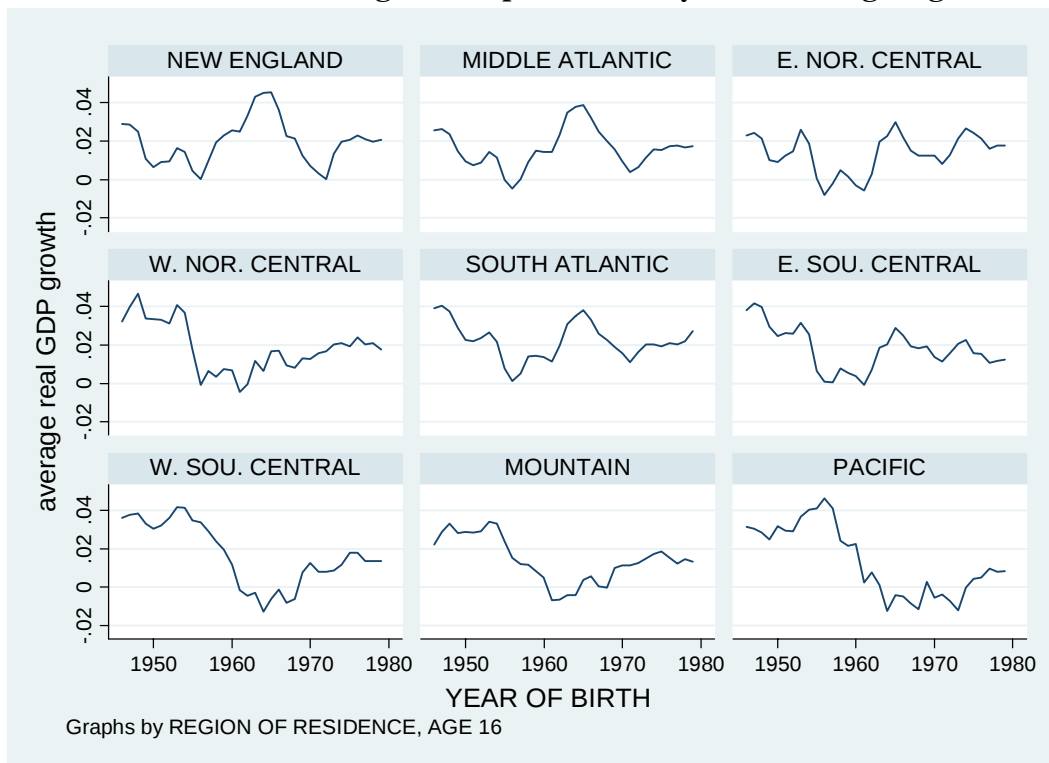


Figure 5
Macroeconomic events during the “impressionable years”- S.D. of regional GDP

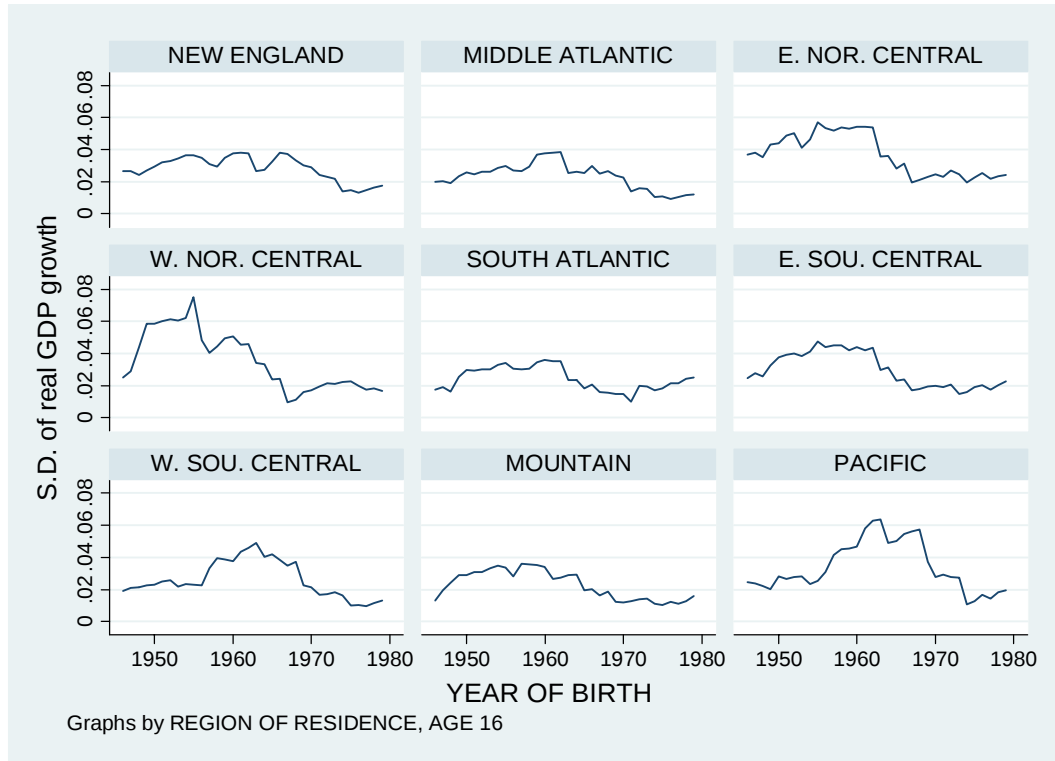
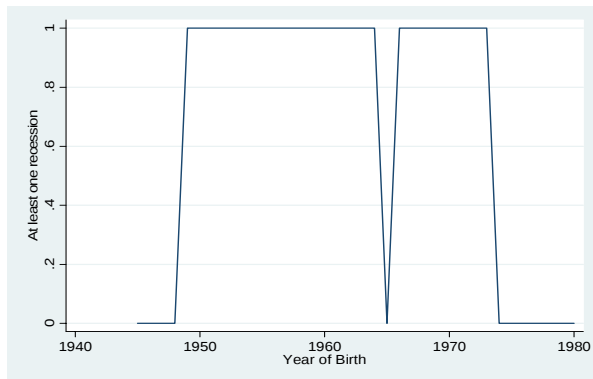
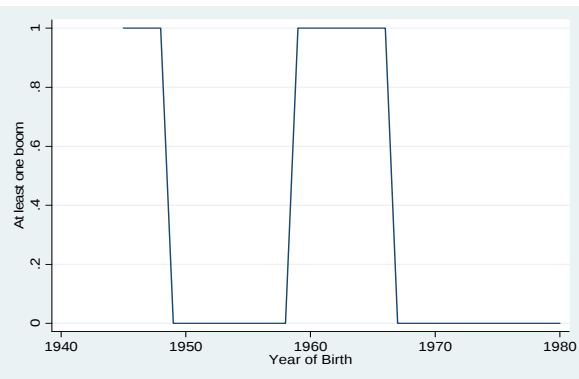


Figure 6
Macroeconomic Events during Impressionable Years, by Year of Birth- National GDP

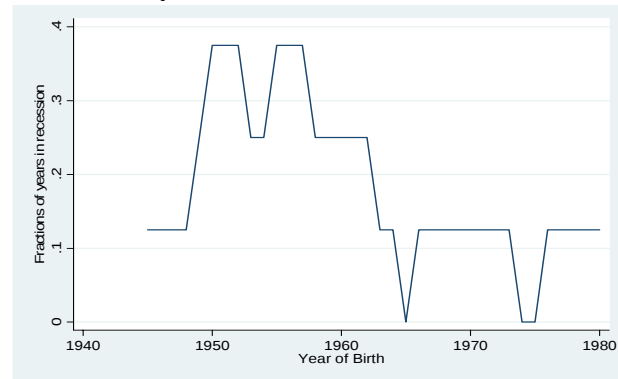
At least one recession



At least one boom



Fraction of years in recession



Average GDP growth



S.D. of GDP growth

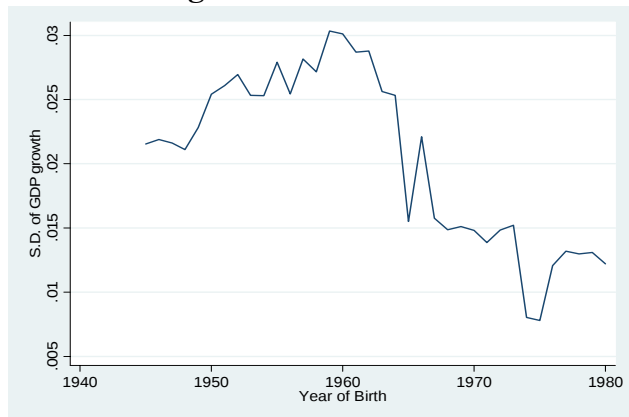


Table 1
General Social Survey, Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Help poor	23,603	3.11	1.18	1	5
Income inequality	24,568	4.28	1.96	1	7
Work and luck	31,028	1.46	.70	1	3
Confidence congress	33,634	1.86	.62	1	3
Confidence exec. fed. gov.	33,652	1.87	.68	1	3
Political ideology	42,096	3.89	1.36	1	7
Trust	31,928	.40	.49	0	1
Image of the world	16,381	4.66	1.58	1	7
Homosexuality	28,976	1.78	1.22	1	4
Homosexuals allowed to speak	29,659	.75	.44	0	1
Homosexuals allowed to teach	29,436	.66	.47	0	1
Male	51,020	.44	.50	0	1
Age	50,836	45.43	17.44	18	89
Black	51,020	.14	.34	0	1
Married	51,006	.55	.50	0	1
Employed	51,012	.62	.49	0	1
Unemployed	51,012	.03	.17	0	1
Income	44,421	9.84	2.90	1	12
Catholic	50,816	.25	.43	0	1
Protestant	50,816	.60	.49	0	1
Less than high school	50,856	.23	.42	0	1
High School	50,856	.52	.50	0	1
Catholic at 16	47,675	.28	.45	0	1
Father less than high school	38,221	.51	.50	0	1
Father high school	38,221	.34	.47	0	1
Protestant at 16	47,675	.63	.48	0	1
With parents at 16	49,476	.72	.45	0	1
Income at 16	37,806	2.78	.86	1	5
Low income at 16	37,806	.08	.28	0	1
Mobility	35,677	2.68	3.90	-18	20
Share of years with democratic presidency (18-25)	47,744	.48	.35	0	1
At least one year in recession (18-25)	30,825	.35	.48	0	1
Fraction of years in recessions (18-25)	30,825	.24	.20	0	1
Average real regional GDP growth (18-25)	30,825	.02	.02	-.09	.11
At least one year in boom (18-25)	30,825	.36	.48	0	1
S.D. regional GDP growth (18-25)	29,980	.03	.01	.00	.15
Current recession	51,020	.34	.47	0	1
At least one year in recession (10-17)	30,825	.35	.48	0	1
At least one year in recession (26-33)	24,921	.29	.45	0	1
At least one year in recession (34-41)	20,812	.27	.45	0	1
At least one year in recession (42-49)	16,452	.31	.46	0	1
At least one year in recession (50-57)	24,753	.33	.47	0	1

Table 2
Preferences for redistribution and recessions during impressionable years

	(1) Help poor	(2) Help poor	(3) Help poor	(4) Help poor
At least one year in recession during impressionable years	.040 (.020)**	.053 (.020)***	.048 (.020)**	.049 (.027)*
Male	-.196 (.018)***	-.180 (.019)***	-.172 (.019)***	-.200 (.024)***
Age	-.016 (.006)***	.013 (.006)**	.013 (.006)**	.003 (.008)
Age squared	.000 (.000)*	-.000 (.000)**	-.000 (.000)**	-.000 (.000)
Black	.658 (.027)***	.583 (.029)***	.576 (.029)***	.595 (.041)***
Married		-.070 (.020)***	-.047 (.021)**	-.105 (.025)***
Employed		-.076 (.026)***	-.078 (.026)***	-.098 (.033)***
Unemployed		.007 (.057)	-.005 (.057)	.031 (.068)
Less than high school		.379 (.035)***	.352 (.035)***	.366 (.046)***
High school		.115 (.020)***	.100 (.020)***	.084 (.028)***
Catholic		-.060 (.030)**	-.057 (.030)*	
Protestant		-.164 (.026)***	-.163 (.026)***	
Income		-.036 (.005)***		
12 income fixed effects			yes	
Father less than high school				.159 (.038)***
Father with high school				.025 (.034)
Catholic at 16				-.020 (.048)
Protestant at 16				-.108 (.046)**
With parents at 16				-.007 (.035)
Income at 16				-.069 (.016)***
Observations	15,353	14,077	14,077	8,461
R-squared	.07	.10	.10	.10
Region fixed effects	yes	yes	yes	yes
Region at 16 fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Region *year fixed effects	no	no	no	yes

Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%.

Table 3
Income inequality and recessions during impressionable years

	(1) Income inequality	(2) Income inequality	(3) Income inequality	(4) Income inequality
At least one year in recession during impressionable years	.054 (.033)*	.065 (.034)*	.057 (.034)*	.083 (.044)*
Male	-.318 (.030)***	-.326 (.032)***	-.314 (.032)***	-.297 (.041)***
Age	-.033 (.009)***	.013 (.010)	.014 (.010)	-.006 (.013)
Age squared	.000 (.000)**	-.000 (.000)*	-.000 (.000)*	-.000 (.000)
Black	.859 (.042)***	.704 (.045)***	.692 (.046)***	.717 (.069)***
Married		-.134 (.034)***	-.089 (.034)***	-.213 (.042)***
Employed		.016 (.043)	.013 (.043)	-.038 (.056)
Unemployed		.339 (.090)***	.321 (.091)***	.385 (.116)***
Less than high school		.795 (.057)***	.742 (.057)***	.748 (.078)***
High school		.398 (.035)***	.366 (.035)***	.331 (.046)***
Catholic		-.151 (.049)***	-.147 (.049)***	
Protestant		-.260 (.044)***	-.259 (.044)***	
Income		-.052 (.007)***		
Income fixed effects			yes	
Father less than high school				.336 (.064)***
Father with high school				.079 (.056)
Catholic at 16				-.022 (.081)
Protestant at 16				-.125 (.078)
With parents at 16				-.057 (.059)
Income at 16				-.153 (.027)***
Observations	15,969	14,668	14,668	8,889
R-squared	.05	.08	.09	.10
Region fixed effects	yes	yes	yes	yes
Region at 16 fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Region *year fixed effects	no	no	no	yes

Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1% .

Table 4
Work and luck as a driver of success and recessions during impressionable years

	(1)	(2)	(3)	(4)
	Work vs. luck	Work vs. luck	Work vs. luck	Work vs. luck
At least one year in recession during impressionable years	.017 (.012)	.010 (.012)	.010 (.012)	.028 (.016)*
Male	.072 (.010)***	.067 (.011)***	.068 (.011)***	.059 (.014)***
Age	.001 (.003)	.007 (.003)**	.007 (.003)**	.010 (.004)**
Age squared	.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)
Black	.118 (.016)***	.096 (.017)***	.095 (.017)***	.129 (.024)***
Married		-.047 (.012)***	-.046 (.012)***	-.064 (.015)***
Employed		-.005 (.014)	-.005 (.014)	-.024 (.019)
Unemployed		.096 (.034)***	.096 (.033)***	.069 (.039)*
Less than high school		-.073 (.019)***	-.076 (.019)***	-.030 (.026)
High school		-.045 (.012)***	-.046 (.012)***	-.015 (.017)
Catholic		-.063 (.017)***	-.063 (.017)***	
Protestant		-.110 (.015)***	-.110 (.015)***	
Income		-.008 (.002)***		
12 income fixed effects			Yes	
Father less than high school				-.012 (.023)
Father with high school				-.017 (.020)
Catholic16				-.037 (.028)
Protestant at 16				-.106 (.027)***
With parents at 16				.004 (.020)
Income at 16				-.009 (.009)
Observations	18,547	17,015	17,015	10,488
R-squared	.01	.02	.02	.03
Region fixed effects	yes	yes	yes	yes
Region at 16 fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Region *year fixed effects	no	no	no	yes

Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1% .

Table 5
Confidence in Congress and recessions during impressionable years

	(1) Congress	(2) Congress	(3) Congress	(4) Congress
At least one year in recession during impressionable years	-.025 (.010)**	-.024 (.010)**	-.024 (.010)**	-.026 (.013)**
Male	-.057 (.009)***	-.046 (.009)***	-.047 (.009)***	-.051 (.011)***
Age	-.015 (.003)***	-.015 (.003)***	-.015 (.003)***	-.016 (.004)***
Age squared	.000 (.000)***	.000 (.000)***	.000 (.000)***	.000 (.000)**
Black	-.028 (.013)**	-.032 (.014)**	-.031 (.014)**	-.015 (.019)
Married		-.004 (.010)	-.006 (.010)	.001 (.012)
Employed		-.010 (.012)	-.010 (.012)	-.006 (.015)
Unemployed		-.016 (.026)	-.015 (.026)	-.014 (.031)
Less than high school		-.026 (.016)	-.025 (.016)	-.007 (.021)
High school		-.026 (.010)***	-.025 (.010)**	-.011 (.013)
Catholic		.120 (.014)***	.120 (.014)***	
Protestant		.084 (.013)***	.085 (.013)***	
Income		-.002 (.002)		
12 income fixed effects			yes	
Father less than high school				-.016 (.018)
Father with high school				.003 (.016)
Catholic at 16				.092 (.023)***
Protestant at 16				.065 (.022)***
With parents at 16				-.008 (.017)
Income at 16				.008 (.008)
Observations	19,687	18,177	18,177	11,937
R-squared	.05	.06	.06	.07
Region fixed effects	yes	yes	yes	yes
Region at 16 fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Region *year fixed effects	no	no	no	yes

Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%

Table 6

Confidence in the exec. branch of the federal govern. and recessions during impress. years

	(1) Exec. fed. gov.	(2) Exec. fed. gov.	(3) Exec. fed. gov.	(4) Exec. fed. gov.
At least one year in recession	-.037	-.042	-.041	-.040
During impressionable years	(.011)***	(.011)***	(.011)***	(.015)***
Male	-.018 (.009)*	-.005 (.010)	-.006 (.010)	-.002 (.013)
Age	-.009 (.003)***	-.011 (.003)***	-.011 (.003)***	-.009 (.004)**
Age squared	.000 (.000)	.000 (.000)*	.000 (.000)*	.000 (.000)
Black	-.112 (.014)***	-.112 (.015)***	-.112 (.015)***	-.145 (.021)***
Married		.014 (.011)	.011 (.011)	.053 (.013)***
Employed		-.021 (.013)	-.020 (.013)	-.032 (.016)*
Unemployed		-.035 (.028)	-.034 (.028)	-.049 (.034)
Less than high school		-.056 (.017)***	-.052 (.018)***	-.049 (.023)**
High school		-.061 (.011)***	-.058 (.011)***	-.037 (.015)**
Catholic		.155 (.015)***	.155 (.015)***	
Protestant		.128 (.014)***	.128 (.014)***	
Income		.001 (.002)		
12 income fixed effects			yes	
Father less than high school				-.057 (.020)***
Father high school				-.011 (.018)
Catholic at 16				.125 (.025)***
Protestant at 16				.137 (.024)***
With parents at 16				.020 (.018)
Income at 16				.023 (.008)***
Observations	19,672	18,165	18,165	11,928
R-squared	.04	.05	.05	.07
Region fixed effects	yes	yes	yes	yes
Region at 16 fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Region *year fixed effects	no	no	no	yes

Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%.

Table 7
Political ideology and recessions during impressionable years

	(1)	(2)	(3)	(4)
	Political ideology	Political ideology	Political ideology	Political ideology
At least one year in recession during impressionable years	-.005 (.019)	.003 (.019)	.002 (.019)	.004 (.026)
Male	-.115 (.017)***	-.182 (.018)***	-.180 (.018)***	-.145 (.023)***
Age	-.022 (.005)***	-.009 (.006)	-.009 (.006)	-.014 (.007)**
Age squared	.000 (.000)**	.000 (.000)	.000 (.000)	.000 (.000)
Black	.320 (.025)***	.295 (.028)***	.294 (.028)***	.434 (.039)***
Married		-.278 (.019)***	-.271 (.019)***	-.300 (.024)***
Employed		.081 (.024)***	.082 (.024)***	.090 (.030)***
Unemployed		.103 (.052)**	.101 (.052)*	.148 (.063)**
Less than high school		-.038 (.032)	-.047 (.032)	.038 (.043)
High school		-.085 (.020)***	-.091 (.020)***	-.081 (.026)***
Catholic		-.491 (.027)***	-.490 (.027)***	
Protestant		-.655 (.025)***	-.654 (.025)***	
Income		-.011 (.004)**		
12 income fixed effects			yes	
Father less than high school				-.141 (.036)***
Father with high school				-.095 (.032)***
Catholic at 16				-.237 (.045)***
Protestant at 16				-.401 (.044)***
With parents at 16				-.076 (.033)**
Income at 16				.017 (.015)
Observations	26,263	24,174	24,174	14,351
R-squared	.03	.08	.08	.07
Region fixed effects	yes	yes	yes	yes
Region at 16 fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Region *year fixed effects	no	no	no	yes

Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1% .

Table 8
Beliefs and recessions during other age periods

	(1) Help poor	(2) Income inequality	(3) Work and luck	(4) Congress	(5) Exec. fed. gov.
At least one recession between 10 and 17	.007 (.033)	-.028 (.056)	.024 (.021)	.026 (.019)	-.013 (.018)
Observations	6,815	7,145	8,055	9,039	9,052
R-squared	.10	.10	.04	.08	.08
At least one recession between 18 and 25	.049 (.027)**	.083 (.044)*	.028 (.016)*	-.026 (.013)**	-.040 (.015)***
Observations	8,461	8,889	10,488	11,937	11,928
R-squared	.10	.10	.03	.07	.07
At least one recession between 26 and 33	.041 (.027)	-.048 (.046)	-.007 (.016)	-.059 (.015)***	-.057 (.013)***
Observations	7,974	8,387	9,840	11,182	11,192
R-squared	.11	.11	.03	.07	.06
At least one recession between 34 and 41	-.002 (.031)	.032 (.052)	.010 (.018)	-.016 (.016)	-.004 (.015)
Observations	6,820	7,088	8,342	9,374	9,374
R-squared	.12	.11	.04	.07	.07
At least one recession between 42 and 49	-.085 (.037)**	-.078 (.061)	-.007 (.021)	.004 (.019)	.006 (.017)
Observations	5,466	5,668	6,974	7,811	7,822
R-squared	.12	.12	.04	.08	.09
At least one recession between 50 and 57	-.063 (.043)	-.073 (.068)	.017 (.023)	-.022 (.021)	.009 (.019)
Observations	4,198	4,427	5,644	6,344	6,340
R-squared	.12	.12	.05	.08	.09

[1] Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%;

[2] These regressions follow specification (4) of Tables 2 through 7. Only the coefficients of interest are reported.

Table 9
Recent recession versus recession during formative age

	(1) Help poor	(2) Income inequality	(3) Work and luck	(4) Congress	(5) Exec. fed. gov.
At least one year in recession during impressionable years	.048 (.026)*	.089 (.043)**	.026 (.016)	-.035 (.015)**	-.022 (.013)*
At least one year in recession in the last eight years	.005 (.042)	.060 (.066)	-.024 (.020)	.017 (.018)	.004 (.017)
Black	.601 (.041)***	.738 (.066)***	.133 (.025)***	-.154 (.021)***	-.013 (.019)
Age	.003 (.008)	-.006 (.013)	.009 (.004)**	-.010 (.004)**	-.016 (.004)***
Age squared	-.000 (.000)	-.000 (.000)	-.000 (.000)	.000 (.000)	.000 (.000)***
Male	-.196 (.024)***	-.309 (.041)***	.058 (.014)***	.000 (.013)	-.050 (.011)***
Married	-.104 (.025)***	-.209 (.042)***	-.065 (.015)***	.054 (.013)***	.002 (.012)
Employed	-.099 (.033)***	-.036 (.054)	-.023 (.018)	-.032 (.016)**	-.005 (.015)
Unemployed	.015 (.073)	.393 (.117)***	.070 (.042)	-.059 (.034)*	-.014 (.032)
Less than high school	.375 (.048)***	.758 (.078)***	-.028 (.026)	-.045 (.023)**	-.001 (.021)
High School	.086 (.026)***	.324 (.046)***	-.016 (.016)	-.034 (.014)**	-.007 (.013)
Father less than high school	.156 (.038)***	.339 (.064)***	-.012 (.022)	-.054 (.020)***	-.014 (.018)
Father with high school	.026 (.033)	.081 (.056)	-.019 (.020)	-.012 (.018)	.004 (.016)
Catholic at 16	-.016 (.050)	-.006 (.083)	-.034 (.028)	.126 (.025)***	.092 (.023)***
Protestant at 16	-.109 (.047)**	-.115 (.080)	-.106 (.027)***	.142 (.024)***	.065 (.022)***
With parents at 16	-.006 (.035)	-.047 (.059)	.004 (.020)	.023 (.019)	-.007 (.017)
Income at 16	-.069 (.017)***	-.154 (.028)***	-.009 (.010)	.021 (.008)**	.008 (.008)
Observations	8,461	8,889	10,488	11,928	11,937
R-squared	.09	.08	.02	.05	.05

[1] Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%;

[2] Specification follows column 4 of Tables 2 through 7.

Table 10
Beliefs and other macroeconomic events

	(1) Help poor	(2) Income inequality	(3) Work and luck	(4) Congress	(5) Exec. fed. gov.
Fractions of years in recession during impressionable years	.180 (.068)***	.125 (.116)	.020 (.042)	-.110 (.033)***	-.117 (.036)***
Observations	8,461	8,889	10,488	11,928	11,937
R-squared	.10	.10	.03	.07	.07
At least one year in booms during impressionable years	.035 (.030)	.024 (.050)	.008 (.018)	-.024 (.015)	-.008 (.016)
Observations	8,461	8,889	10,488	11,928	11,937
R-squared	.10	.10	.03	.07	.07
Average real GDP growth during impressionable years	-2.520 (.859)***	-1.765 (1.441)	-.424 (.518)	1.074 (.410)***	1.425 (.450)***
Observations	8,461	8,889	10,488	11,928	11,937
R-squared	.10	.10	.03	.07	.07
S.D. of real GDP growth during impressionable years	1.771 (1.005)*	.512 (1.703)	.577 (.602)	-2.170 (.485)***	-1.570 (.531)***
Observations	8,245	8,667	10,173	11,555	11,560
R-squared	.10	.10	.03	.07	.07

[1] Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%;

[2] Specification follows column 4 of Tables 2 through 7. Only the coefficients of interest are reported.

Table 11
Beliefs and recessions, restricting the sample to non-movers

	(1) Help poor	(2) Income inequality	(3) Work and luck	(4) Congress	(5) Exec. fed. gov.
At least one year in recession during impressionable years	.062 (.029)**	.099 (.048)**	.030 (.018)*	-.035 (.016)**	-.025 (.015)*
Black	.583 (.046)***	.687 (.075)***	.130 (.028)***	-.140 (.023)***	-.001 (.021)
Age	.010 (.009)	-.008 (.014)	.014 (.005)***	-.013 (.004)***	-.018 (.004)***
Age squared	-.000 (.000)*	-.000 (.000)	-.000 (.000)**	.000 (.000)*	.000 (.000)***
Male	-.201 (.027)***	-.312 (.045)***	.063 (.016)***	-.016 (.014)	-.060 (.013)***
Married	-.089 (.028)***	-.196 (.047)***	-.061 (.017)***	.041 (.014)***	.003 (.013)
Employed	-.113 (.037)***	-.050 (.060)	-.021 (.021)	-.024 (.018)	.003 (.016)
Unemployed	-.013 (.080)	.397 (.130)***	.065 (.047)	-.058 (.037)	-.025 (.035)
Less than high school	.372 (.052)***	.702 (.086)***	-.013 (.029)	-.048 (.025)*	-.007 (.023)
High school	.112 (.030)***	.307 (.052)***	-.021 (.019)	-.038 (.016)**	-.018 (.015)
Father less than high school	.175 (.043)***	.430 (.072)***	-.010 (.025)	-.056 (.023)**	-.005 (.020)
Father with high school	.047 (.038)	.164 (.064)***	-.007 (.023)	-.023 (.021)	.009 (.019)
Catholic at 16	.007 (.055)	.053 (.092)	-.022 (.032)	.114 (.028)***	.105 (.025)***
Protestant at 16	-.101 (.053)*	-.096 (.089)	-.099 (.031)***	.131 (.027)***	.072 (.024)***
With parents at 16	-.021 (.040)	-.082 (.068)	.021 (.023)	-.001 (.021)	-.019 (.020)
Income at 16	-.068 (.019)***	-.162 (.032)***	-.013 (.011)	.021 (.010)**	.006 (.009)
Region fixed effects	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Observations	6,807	7,149	8,478	9,686	9,695
R-squared	.09	.08	.02	.06	.05

[1] Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%.

[2] Specification follows column 4 of Tables 2 through 7.

Table 12
Beliefs and recessions, controlling for the dominant ideology during youth

	(1) Help poor	(2) Income inequality	(3) Work and luck	(4) Congress	(5) Exec. fed. gov.
At least one year in recession during impressionable years	.049 (.027)*	.089 (.044)**	.028 (.016)*	-.040 (.015)***	-.023 (.013)*
Dominant ideology	-.013 (.048)	.202 (.078)***	-.011 (.027)	.002 (.023)	.058 (.021)***
Black	.595 (.041)***	.721 (.069)***	.129 (.024)***	-.145 (.021)***	-.014 (.019)
Age	.003 (.008)	-.009 (.013)	.010 (.004)**	-.009 (.004)**	-.018 (.004)***
Age squared	-.000 (.000)	-.000 (.000)	-.000 (.000)	.000 (.000)	.000 (.000)***
Male	-.200 (.024)***	-.296 (.041)***	.059 (.014)***	-.002 (.013)	-.051 (.011)***
Married	-.105 (.025)***	-.214 (.042)***	-.064 (.015)***	.053 (.013)***	.001 (.012)
Employed	-.098 (.033)***	-.040 (.056)	-.024 (.019)	-.032 (.016)*	-.006 (.015)
Unemployed	.030 (.068)	.387 (.116)***	.068 (.039)*	-.049 (.034)	-.013 (.031)
Less than high school	.366 (.046)***	.743 (.078)***	-.030 (.026)	-.049 (.023)**	-.009 (.021)
High school	.084 (.028)***	.330 (.046)***	-.015 (.017)	-.037 (.015)**	-.011 (.013)
Father less than high school	.159 (.038)***	.336 (.064)***	-.012 (.023)	-.057 (.020)***	-.016 (.018)
Father with high school	.025 (.034)	.081 (.056)	-.017 (.020)	-.011 (.018)	.004 (.016)
Catholic at 16	-.020 (.048)	-.021 (.081)	-.037 (.028)	.125 (.025)***	.093 (.023)***
Protestant at 16	-.108 (.046)**	-.126 (.078)	-.106 (.027)***	.137 (.024)***	.066 (.022)***
With parents at 16	-.007 (.035)	-.055 (.059)	.003 (.020)	.021 (.018)	-.007 (.017)
Income at 16	-.069 (.016)***	-.153 (.027)***	-.009 (.009)	.023 (.008)***	.008 (.008)
Observations	8,461	8,889	10,488	11,928	11,937
R-squared	.10	.10	.03	.07	.07

[1] Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%;

[2] Specification follows column 4 of Tables 2 through 7.

Table 13
Beliefs and recessions, interaction with background during youth

	(1) Help poor	(2) Income inequality	(3) Work and luck	(4) Congress	(5) Exec. fed. gov.
At least one year in recession during impressionable years	.051 (.027)*	.090 (.046)*	.022 (.017)	-.038 (.015)***	-.024 (.014)*
Low income at 16	.227 (.072)***	.058 (.126)	.062 (.044)	-.036 (.037)	-.017 (.034)
Recession*low income at 16	-.072 (.123)	-.237 (.211)	-.084 (.081)	-.028 (.068)	-.057 (.062)
Observations	8,461	8,350	9,855	11,928	11,937
R-squared	.10	.10	.03	.07	.07
At least one year in recession during impressionable years	.081 (.032)**	.071 (.053)	.026 (.019)	-.043 (.017)**	-.032 (.016)**
Father less than high school	.178 (.034)***	.259 (.057)***	-.000 (.019)	-.052 (.017)***	-.024 (.015)
Recession*father less high school	-.095 (.051)*	.035 (.085)	.006 (.030)	.011 (.026)	.016 (.024)
Observations	8,461	8,889	10,488	11,928	11,937
R-squared	.10	.10	.03	.07	.07
At least one year in recession during impressionable years	.063 (.028)**	.082 (.046)*	.025 (.017)	-.034 (.015)**	-.023 (.014)*
Less than high school	.355 (.048)***	.505 (.083)***	-.029 (.026)	-.007 (.023)	.010 (.021)
Recession*less than high school	-.175 (.082)**	-.061 (.138)	.041 (.048)	-.045 (.042)	-.030 (.038)
Observations	8,461	8,889	10,488	11,928	11,937
R-squared	.10	.09	.03	.07	.07
At least one year in recession during impressionable years	.052 (.030)*	.057 (.050)	.033 (.018)*	-.046 (.016)***	-.036 (.015)**
Mobility	.014 (.004)***	.025 (.007)***	.004 (.002)*	-.005 (.002)**	-.001 (.002)
Recession*mobility	-.000 (.007)	-.000 (.011)	-.004 (.004)	.005 (.004)	.002 (.003)
Observations	8,175	8,596	10,138	11,561	11,565
R-squared	.10	.09	.03	.07	.07

[1] Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%;

[2] Specification follows column 4 of Tables 2 through 7. Only the coefficients of interest are reported.

Table 14
Recessions and other beliefs

	(1) World Image	(2) Homosexuality	(3) Homosexuals allowed to speak	(4) Homosexuals allowed to teach
At least one year in recession during impressionable years	-.039 (.054)	-.014 (.028)	-.007 (.009)	-.003 (.010)
Black	-.304 (.078)***	-.191 (.041)***	.010 (.013)	.041 (.014)***
Age	.035 (.020)*	.008 (.008)	.007 (.002)***	.002 (.003)
Age squared	-.000 (.000)	-.000 (.000)	-.000 (.000)***	-.000 (.000)
Male	-.197 (.047)***	-.184 (.025)***	-.031 (.008)***	-.043 (.008)***
Married	-.091 (.049)*	-.320 (.025)***	-.035 (.008)***	-.050 (.009)***
Employed	.020 (.065)	.076 (.032)**	.002 (.010)	.023 (.011)**
Unemployed	-.151 (.146)	.123 (.067)*	-.017 (.021)	.026 (.023)
Less than high school	-.484 (.089)***	-.588 (.045)***	-.245 (.014)***	-.288 (.015)***
High school	-.185 (.054)***	-.446 (.028)***	-.096 (.009)***	-.117 (.010)***
Father less than high school	-.179 (.075)**	-.276 (.039)***	-.087 (.012)***	-.090 (.013)***
Father with high school	-.156 (.066)**	-.171 (.035)***	-.025 (.011)**	-.029 (.012)**
Catholic at 16	.058 (.096)	-.262 (.049)***	-.008 (.015)	-.004 (.017)
Protestant at 16	-.042 (.092)	-.476 (.047)***	-.042 (.014)***	-.063 (.016)***
With parents at 16	.081 (.067)	-.131 (.035)***	-.024 (.011)**	-.034 (.012)***
Income at 16	.034 (.031)	.080 (.016)***	.019 (.005)***	.022 (.006)***
Observations	4,233	10,122	10,401	10,308
R-squared	.06	.19	.14	.15

[1] Robust standard errors in parenthesis; * significant at 10%, ** significant at 5%, *** significant at 1%;

[2] Specification follows column 4 of Table 2 through 7.

Table 15
Recessions and trust

	(1)	(2)	(3)	(4)
	Trust	Trust	Trust	Trust
At least one year in recession during impressionable years	.006 (.008)	.003 (.008)	.004 (.008)	-.006 (.011)
Male	.032 (.007)***	.020 (.007)***	.018 (.007)**	.019 (.010)*
Age	.016 (.002)***	.003 (.002)	.003 (.002)	.008 (.003)***
Age squared	-.000 (.000)***	.000 (.000)	.000 (.000)	-.000 (.000)
Black	-.216 (.008)***	-.182 (.009)***	-.181 (.009)***	-.174 (.016)***
Married		.017 (.008)**	.011 (.008)	.034 (.010)***
Employed		.011 (.009)	.011 (.009)	.011 (.013)
Unemployed		-.024 (.019)	-.021 (.019)	-.030 (.027)
Less than high school		-.296 (.012)***	-.288 (.012)***	-.253 (.018)***
High school		-.171 (.008)***	-.165 (.008)***	-.147 (.011)***
Catholic		-.041 (.011)***	-.042 (.011)***	
Protestant		-.004 (.010)	-.005 (.010)	
Income		.010 (.002)***		
Income fixed effects			yes	
Father less than high school				-.094 (.015)***
Father high school				-.027 (.014)**
Catholic at 16				.007 (.020)
Protestant at 16				.021 (.019)
With parents at 16				.022 (.014)
Income at 16				.029 (.006)***
Observations	19,261	17,228	17,228	10,153
R-squared	.07	.12	.12	.12
Region fixed effects	yes	yes	yes	yes
Region at 16 fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Region fixed effects*year fixed effects	no	no	no	yes

Robust standard errors in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.