Growing Up in a Recession

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Abstract

Do generations growing up during recessions have different socio-economic beliefs than generations growing up in good times? We study the effects of experiencing a recession when young on individuals' 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 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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"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

We investigate whether individuals experiencing macroeconomic shocks when young have systematically different beliefs than individuals who did not experience a macroeconomic shock. Anecdotal evidence suggests that, indeed, the experience of difficult times at young age leaves a long-lasting mark on individuals' beliefs and attitudes, but little systematic analysis is available so far.[2] 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.[3] We find that individuals experiencing recessions during the formative years support more government redistribution, and have less confidence in institutions.

Economists have long recognized that economic beliefs have an impact on institutional outcomes, and may explain the observed difference on the size and role of the government across countries.[4] Despite the crucial role of beliefs in explaining institutional outcomes, it is still unclear how beliefs are formed and change. Two extreme views are prevalent in the literature: one holds that beliefs are largely determined by present economic conditions, the second that beliefs are ingrained in culture and change extremely slowly. According to the first view, individuals' current experiences or factor endowments determine beliefs. For instance, the redistribution of land changed the preferences of squatters in Buenos Aires almost overnight (Di Tella, Galiani, and Schargrosky 2007). Also Boycko and others (1992) find that attitudes depend largely on situations; even after many decades of propaganda, there was no `homo sovieticus' when Soviet Union fell.

According to the alternative view, beliefs are engrained in culture and slow moving. For instance, strong collective experiences, such as the communist regime that existed in Eastern Germany before 1990, have had a long lasting impact on the preferences for redistribution of East

[2] Anecdotal evidence even suggests that large crises have an impact on the collective memories across generations. For instance: "`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" from the *New York Times*, October 28, 2008.

[3] See Krosnick and Alwin (1989).

[4] See Alesina and Angeletos (2005), Benabou and Tirole (2006), Fong (2001) and Piketty (1995).

Germans (Alesina and Fuchs-Schündeln 2008).[5] More generally, using data on immigrants to the US, Luttmer and Singhal (2008) show that common culture (defined as shared ancestry in the country of origin) plays an important role in the determination of preferences for redistribution. According to this view, beliefs and values are passed down from parents to children and they tend to persist from generation to generation.[6]

In this paper, we explore a third (life-cycle) view on belief formation, which is consistent with the current research in social psychology. We investigate how different experiences of macroeconomic shocks during youth can be relevant for the formation of beliefs. We show that differences in macroeconomic experiences during youth have a permanent effect on the formation of beliefs. According to a vast literature in social psychology, 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 during the so–called formative years and remain largely unaltered throughout the remaining adult years. In particular, the *IYH* maintains that there is a sensitive socialization period in the life of individuals during which socializing influences have the most profound impact, and 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 maintains that individuals are flexible and responsive to social circumstances when they are young, but are gradually less responsive as they age.[7] Both hypotheses have similar predictions that belief formation happens mostly during adolescence and early adulthood and could eventually fades with age.[8]

By looking at the relationship between beliefs and the economic environment, we provide an interpretation for changes in collective national beliefs and attitudes at frequencies that are not

[5] In addition, beliefs and attitudes would help in forming institutions, which in turn validate these beliefs, making them even more persistent (Piketty 1995).

[6] See Bisin and Verdier (2000, 2001), Dohmen et al. (2007), Guiso, Sapienza and Zingales (2008a) and Tabellini (2008).

[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).

compatible with the view that beliefs are totally immutable.[9] By showing that shocks experienced during adulthood tend to have a permanent effect in the formation of beliefs, we contribute to the literature that claims that important historical experiences leave a mark in the formation of beliefs.[10]

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)[11], 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 how the dependency on oil and macroeconomic volatility move the electorate in Venezuela; and Alesina and Fuchs-Schuendeln (2008) focus on the importance of political ideology in shaping preferences for redistribution.

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 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. 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). 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 (2007) test whether individuals' experiences of macroeconomic shocks affect stock market participation and the fraction of wealth that individuals are willing to invest in stocks.

Our analysis is based on data from the General Social Survey, which provides repeated cross-sections over a thirty-year period with information on economic beliefs, demographic

[9] France is an interesting example in that respect. France 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.

[10] Alesina and Fuchs- Schündeln find that being exposed for many years to the communist regime tend to have a long lasting effects on preferences for redistribution.

[11] 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.

characteristics as well as location and economic conditions of subjects when they were teenagers.[12] We focus our work on preferences for government redistribution and confidence in the government. Preferences for redistribution have been considered fundamental for the determination of the tax and transfer system of a country (Alesina and Glaeser, 2004), therefore understanding how the macroeconomic environment could affect them is a fundamental question. We also look at trust in the government, as institutions are fundamental for economic growth (Acemoglu et al., 2001).

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 the 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.

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 (GSS hereafter), which conducts basic scientific research on the structure and development of the 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.[13] The GSS also contains background information on each individual, including 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

[12] See the data section for a more detailed description.
[13] For detailed information on the GSS see: http://www.norc.org/GSS+Website/.

to 2006. Descriptive statistics for our sample are presented in Table 1. The sample size for most of our dependent variables is smaller than the sample for basic demographic questions. This is due to the fact that the questions are not asked in all the years in the survey (for example the question on preferences for redistribution has been asked only in seventeen out of the twenty six years of the survey)

As explained in the introduction, we focus on preferences for redistribution and trust in the government, based on the following questions:

1. **Preferences for government redistribution:** *"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?"*
2. ***Confidence in the government*****:** *"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

Two simple scatter plots could help to motivate our paper. Figure 1a shows a strong correlation between young adults' preferences for redistribution in the US (as calculated from the General Social Survey) and GDP growth[14]. More directly related to our story, Figure 1b shows the correlation between preferences for redistribution and economic growth during the impressionable years, by year of birth; individuals growing in a period of lower growth have stronger preferences for redistribution.[15] Both figures confirm the idea that a favorable macroeconomic environment significantly decreases the desires for redistribution.

The correlations shown in both panels of Figure 1 could be spurious and driven by omitted variables. The correlation shown in Figure 1a, for example, could be the result of the specific year of interview; whereas the birth cohorts shown in Figure 1b could have many other variables in common, besides the same macroeconomic experience at the national level.

For this reason, our identification strategy relies on cross-regional variation in individual experiences of macroeconomic conditions during critical age. This identification strategy, by controlling for cohort, age and year of interview effects, will allow us to better isolate the importance

[14] We show the correlation between the beliefs of young adults (individuals between 18 and 25) and the GDP growth in the survey year.

[15] For example, we associate to all the individuals born in 1940 the average GDP growth rate that they experienced when they were 18-25 years old (i.e. the GDP growth rate corresponding to 1958-1965).

of the macroeconomic environment. 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 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.[16] 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.[17]

We focus on the age range of 18-25 for two reasons: first, social psychology research suggests that this specific period of an individual life is the most relevant for the formation of economic beliefs. Second, since the GSS only provides the region of residence at 16, it would be hard for us to replicate the analysis for different age ranges. Assuming, for example, the same location as at age 16 for a person who is much older, could introduce some possible measurement error, which could be greater the farther the person is from 16.[18]

For our dependent variable, we construct 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" and zero otherwise. 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

[16] 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).

[17] By comparison, consistent regional unemployment is available only since 1976 from BLS. Other series based on consistent methodologies are available since 1968.

[18] We nevertheless do some robustness checks in the appendix, but the results should be taken with caution for the reason mentioned above.

the depth of the shocks is relevant. We also look at whether booms are also relevant for the formation of beliefs. 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. Figures 2-6 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 2 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 2-6, 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 2). 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 same 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, Figures 7 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.[19]

Our baseline specification is as follows:

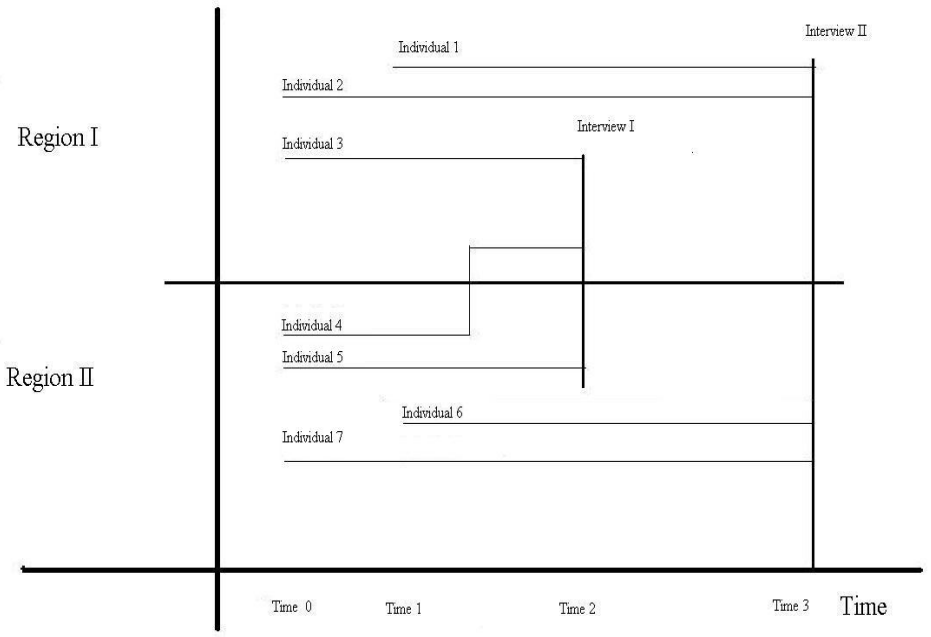
$$Beliefs_{irt} = \alpha_0 + \alpha_1 macro\ shock_{r16} + \alpha_2 X_i + \delta_r + \eta_t + \gamma_{r16} + \delta_r \eta_t + \varepsilon_{irt}$$

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

[19] 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%.

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. 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. 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.[20] Finally, we include all region*year interactions ($\delta_r \eta_t$) to take into account all possible time varying regional covariates. Our variable of interest, $macro\ shock_{r16}$, 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.[21]

To illustrate better our identification strategy consider the following graph:



Individual 1 grew up in region 1 at time 1 and interviewed at time 3 in the same region. Individual 2 has the same profile as individual 2 but was born at time 0; the two individuals share the same regional dummies and the dummy for interview year. Individual 3 grew up in time 0 and was interviewed at time 2. Individual 4 grew up in regions II but moved to region I where she was

[20] The current region does not correspond necessarily to the region *r16* in which the individual grew up, as individuals may have moved.

[21] 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.

interviewed at time 2. And so on. We control for regional effects of where an individual grew up (individuals 1, 2, 3 will share the same region of origin *r* variable), for cohort effects (individuals 2, 3, 4, 5, 7 will all share the same cohort dummy), for age (individuals 3 and 4 will share the same age dummy), and for interviews (individuals 3, 4, and 5 will all share the same dummy).

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 and control for the national cycle, provide a lower bound of the effects of macroeconomics on beliefs.[22]

Second, by using interview year fixed effects we control for the common *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. 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 individuals' endowment through education and on health (Dehejia and Muney 2004). 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 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. In addition, we also control for many variables regarding the family background of the individual at age 16.

[22] 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.

All regressions are estimated using OLS for ease of interpretation, but similar results are obtained with ordered logit. Tables 2-4 report the results for preferences for redistribution, and confidence in the Congress and the executive branch of the federal government.

We run six 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 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 cohort effects. Specification (4) adds a non-parametric control for income (with the inclusion of 12 income dummies).[23] Income can be the main reason for why people could be more pro-redistribution today (a difference experience in the labor market during a recession should 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). Specification (5) is meant to control for the status of the person when he/she was 16. We do so, by including a non-parametric specification of the income variable at 16 (with the inclusion of 5 dummies).[24] Finally, specification (6) includes additional controls on the family background of the individual at 16. In particular, it includes both the level of education of the father and his occupation at 16. The number of observations is substantially smaller due to a higher number of observations but the results do not change.[25] These variables are meant to capture individual characteristics, which could be correlated with frequency of regional economic shocks.[26] In addition, this last specification also includes all interactions between region and

[23] The income variable 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.

[24] The income variable 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"

[25] 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 father education.

[26] 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).

(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. In all the specifications we cluster the standard error at the region-year level.

3. Results

Preferences for redistribution

Table 2 reports the regressions with the beliefs about the role of the government as dependent variable. A positive coefficient means a higher preference for government redistribution (i.e. a higher number in the "help poor" regression means that the government should take care of people in need). 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. The effect of having gone through a recession is equivalent to half of the effect of having completed high school (as compared with people with college education and beyond) and a bit smaller than the effect of being employed (obviously with opposite sign, the excluded reference group are people out of the labor force). Consistent with the literature, employed, educated, married, 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.

Trust in institutions

Tables 3 and 4 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. Individuals hit by a negative macroeconomic shock have a significantly lower level of confidence in Congress and the executive branch of the federal government. As with the previous variables, living through a recession during the formative years explains about 4 percent of the variation in the confidence in institutions, and it 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 controlling for income and for a large set of family controls during the critical age (specification 6), indicating that the recession does not influence beliefs through the personal endowment channel. The cohort effect reduces the magnitude

of the coefficient for this variable, but not for the confidence in the federal government or preferences for redistribution, where the coefficients are very stable.

Political attitudes

The beliefs discussed above are important in determining broad ideology. In particular, the experience of a recession during critical age with the resulting preference for greater government involvement could move individuals toward a more left leaning orientation. At the same time, though, distrust in the government could prevail and move individuals towards a more right wing ideology. To see whether the impact of a macroeconomic shock is also relevant for a broader measure of political orientation, Table 5 reports the results for ideological self-placement using the same specification of Table 2. 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. Experiencing a recession during the formative years does not influence ideological self-placement. This is 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 3 and 4). This contradiction between the requests from the state and the confidence in it could offset each other, with the results that there is no 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 previous 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. Higher education is associated with a more left wing ideology.

4. Robustness

This section presents robustness tests with respect to omitted variables, different definitions of shocks, restricting the sample to non-movers, and running some placebo regressions on beliefs that are less likely to be affected by macroeconomic conditions.

Omitted variables

The results discussed above could be the results of correlation between omitted variables and beliefs and the local shocks. However, these possible omitted variables should not be correlated to any nationwide time effect, cohort effects, region of current residence time-invariant characteristics or region of residence during critical age time-invariant characteristic. The results are also robust to the inclusion of region-specific fixed effects. Finally, our main specification includes background characteristics during critical age in addition to all other controls and a very flexible specification for current income and for the income of the person at 16.

Alternative definitions of shocks

In this section, we test the robustness of our results to alternative definitions of macroeconomic outcomes (Table 6 reports the results using specification (6) 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 6) confirm the role of the experience earlier in life in belief formations. The longest is the exposure to recessions the largest is the impact on beliefs.

Second, we also look at the effects of spending a large fraction of the impressionable years in booms. We found an effect that is symmetric to experiencing a recession. A large exposure to booms decreases the desire for redistribution and increases confidence in institutions. The effects are significant and similar in magnitude to the impact of spending a large fraction of the impressionable years in recessions.

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 and more confidence in institutions, as expected. The results are consistent with the symmetric effect found above on the importance of booms and recessions in the formation of beliefs.

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 recession.[27] The results indeed confirm this story. Overall, these results point at the importance of the macroeconomic environment in the formation

[27] Wolfers (2003)finds evidence that macroeconomic volatility reduces happiness.

of beliefs: spending a long period of time in an unfavorable or volatile economic environment increases the desire for redistribution and lowers the confidence in institutions. Experiencing higher growth during the formative years has the opposite effect.

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. Initial conditions during early adulthood, including income and level of education of the parents, could be relevant in explaining the impact of recession of beliefs. A priori, however, it is unclear how initial endowment could influence how an individual is affected by a recession. For instance, an individual born into a wealthy family could be insulated from the effects of a recession; or an educated individual (with educated parents) could be more informed about general economic conditions. In order to test for this possibility, we include an interaction term between recessions during critical age and different initial characteristics in our baseline specification (Table 2 column 6).

Table 7 reports the results for the parameters of interest (recession, initial conditions, and their interaction). Initial conditions are relevant to explain preferences for redistribution (individuals with lower level of education, both personal or of the father, and lower income at 16 are more inclined to favor redistribution), but not confidence in institutions. The interaction terms however are never significant for any of the beliefs and overall, our main results on beliefs hold.

Restricting the sample to non-movers

Individuals may react differently to macroeconomic shocks and this could create heterogeneity in our sample. 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 (6) in Tables 2 restricting the sample to non-movers.

The coefficients reported in Table 8 are similar to the coefficients obtained in the regressions using the entire sample, indicating that heterogeneity in the sample is not a major issue. This specification has also the advantage of reducing measurement error as the region at 16 that we attribute to each individual for the impressionable year period is precisely defined.

Impressionable years versus recent years

Another set of theories stresses how individuals discount experiences far back in the past and overweight recent experiences. In order to test this hypothesis against the hypothesis of impressionable years, we repeat our baseline regression (specification 6 in Tables 2), introducing a variable "current recession" measured in the same way as the recession during formative age, a variable equal to one if the individual experienced a recession in the eight years prior to the interview. Table 9 reports the coefficients of interest for the relevant regressions. There is no evidence that recent experience of a recession has any impact on beliefs, while the results on the recession during the critical age remain valid.[28]

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.

Unfortunately, given the nature of our dataset, it is difficult to compare the importance of impressionable years versus other periods of life. For two reasons: First, the GSS only provides the region when the person was living at 16, so the farther we go from 16 the highest the measurement error is likely to be. In addition, given the repeated cross-section nature of our dataset and the fact that regional macroeconomic variables start only from 1963, when we look at older individuals we also face the problem of a smaller sample in the regressions. With these caveats, we run the regressions for other age ranges. We repeat our basic regressions as in specification (6) in Tables 2 based on different intervals of years (10-17, 26-33, 34-41, 42-49 and 50-57)[29] Table A1 in the Appendix reports the coefficients on the variable indicating whether the individual experienced at least one recession at different ages.[30] 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

[28] 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.
[29] 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.
[30] We do not report the coefficients on the remaining controls, but complete results are available from the authors.

during which the majority of beliefs under consideration is formed, with the exception of preferences for redistribution, for which experience of shocks during formative age as well as slightly later in life are both relevant. One more time, this is not meant to be a test of the impressionable years hypothesis versus the other theories, therefore, for the above explained reasons, the results need to be taken with caution.

Counterfactuals – placebo regressions

Differences in macroeconomic experiences during formative age should matter mostly for economic and political beliefs and not for other types of beliefs[31]. 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 10 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, male 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

[31] Note that macroeconomic shocks could have a broader effects on different types of beliefs; for example, a negative shocks could be positively related to more church attendance, therefore changing the position towards gays, or the vision of the world. Similarly, if macroeconomic shocks had an impact on political ideology, people would be more likely to embrace all the position of the new party they are voting for.

variable of interest (Table 11). 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. This is consistent with the literature showing that generalized trust has deep cultural roots, is transmitted from generation to generation and tend to change very slowly over time.[32]

5. Conclusions

In this paper, we study the effect of macroeconomic shocks during youth on the formation of beliefs. We do so by matching self-reported individual answers with macroeconomic experience during youth. We use information from the General Social Survey and regional and yearly variation in macroeconomic conditions to identify these effects. We find that the experiencing a macroeconomic shock during early adulthood (the so-called formative years) has long lasting effects in the formation of beliefs.

We contribute to the literature on the determinants of beliefs in four 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, by considering the "formative years" as opposed to the recent experience or an individual's entire history, we bring the findings of social psychology to economics. Third, we use time-varying regional shocks to identify the impact of macroeconomic shocks on beliefs; identification of these effects has also been challenging because of the problem of distinguishing cohort, age, and year of interview effects. By using data with time and regional variation we overcome these problems. Fourth, 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).

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.

[32] See Dohmen et al. (2007) and Guiso, Sapienza and Zingales (2008).

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APPENDIX A

Table A1
Beliefs and recession during other age periods

	(1) Help poor	(2) Congress	(3) Fed. gov.
At least one year in recession	0.010	-0.028	-0.008
between 10 and 17	(0.027)	(0.014)*	(0.015)
Observations	7414	9215	9198
R-squared	0.09	0.06	0.06
	Help poor	Congress	Fed. gov.
At least one year in recession	**0.040**	**-0.029**	**-0.046**
between 18 and 25	**(0.023)***	**(0.012)****	**(0.013)*****
Observations	11215	14575	14565
R-squared	0.10	0.07	0.07
	Help poor	Congress	Fed. gov.
At least one year in recession	0.064	-0.012	-0.014
between 26 and 33	(0.028)**	(0.013)	(0.014)
Observations	8243	10748	10740
R-squared	0.10	0.05	0.06
	Help poor	Congress	Fed. gov.
At least one year in recession	-0.003	-0.007	-0.016
between 34 and 41	(0.033)	(0.015)	(0.017)
Observations	6819	8780	8785
R-squared	0.09	0.05	0.05
	Help poor	Congress	Fed. gov.
At least one year in recession	-0.096	-0.013	0.012
between 42 and 49	(0.033)***	(0.018)	(0.019)
Observations	5288	7013	7013
R-squared	0.09	0.06	0.06
	Help poor	Congress	Fed. gov.
At least one year in recession	-0.050	0.020	0.002
between 50 and 57	(0.042)	(0.020)	(0.021)
Observations	3873	5416	5417
R-squared	0.09	0.06	0.05

[1] Standard errors are clustered at the region*time level. *** significant at 1%, ** significant at 5%, * significant at 10%; [2] Specification follows column 6 of Tables 2. [3] *At least one year in recession* 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 the critical age period of reference. 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.

Figure 1a
Correlation between Young Adults Preferences for Redistribution and the GDP growth rate
(GSS Survey Year shown in the graph)

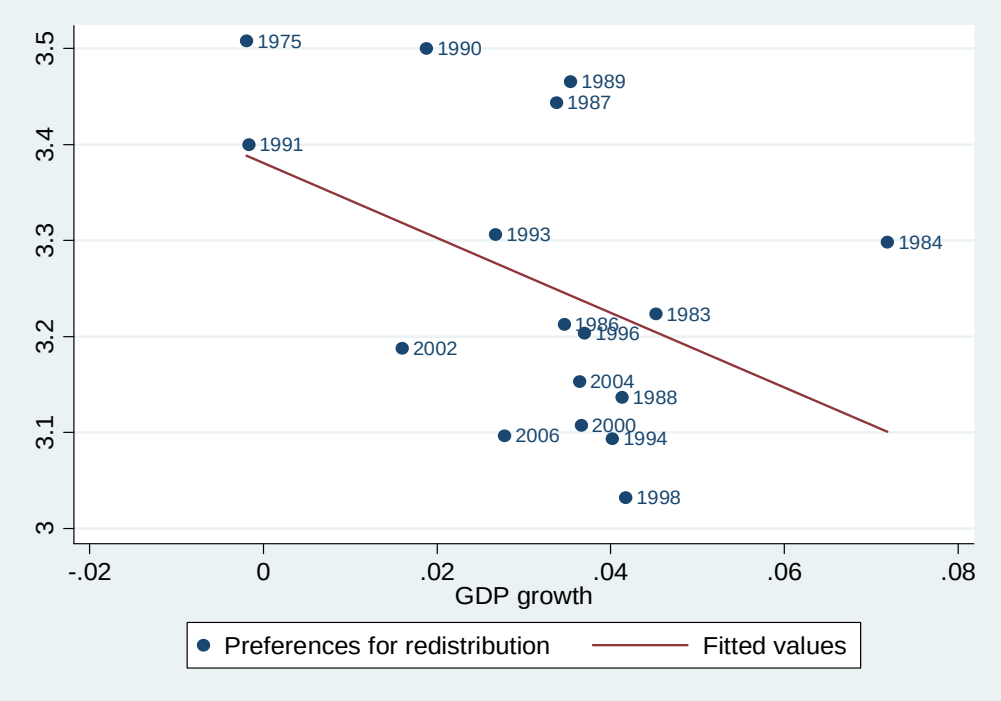


Figure 1b
Correlation between Preferences for Redistribution and the Economy Growth Rate during the Impressionable Years
(Year of Birth shown in the graph)

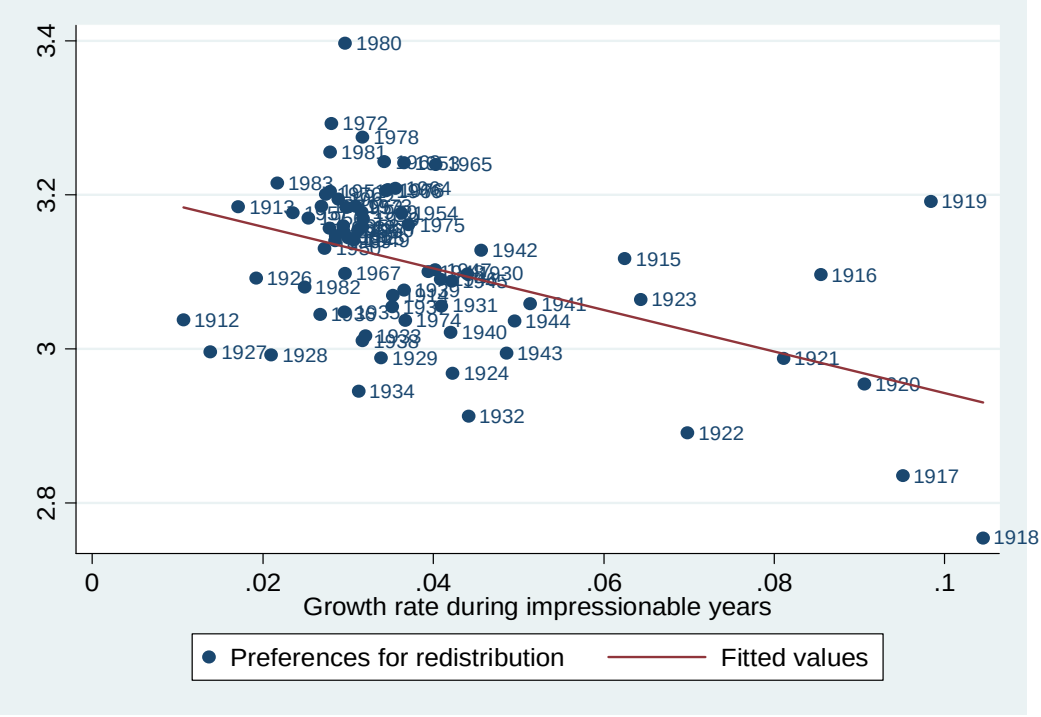


Figure 2
Macroeconomic events during the "impressionable years"- At least one recession

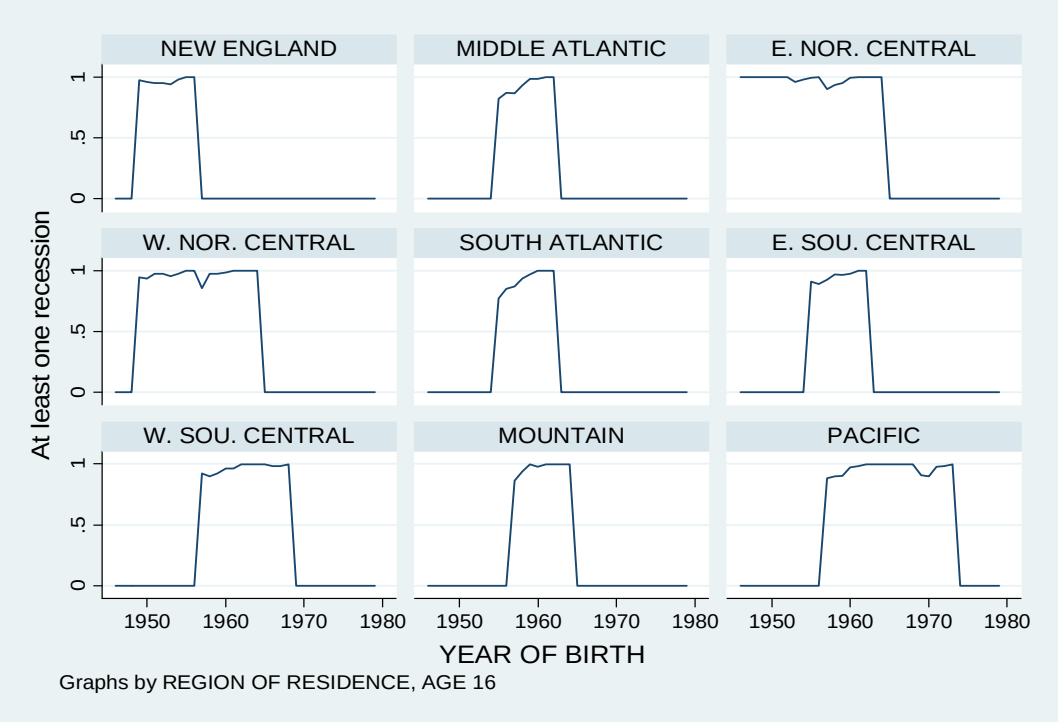


Figure 3
Macroeconomic events during the "impressionable years"- Average years of recession

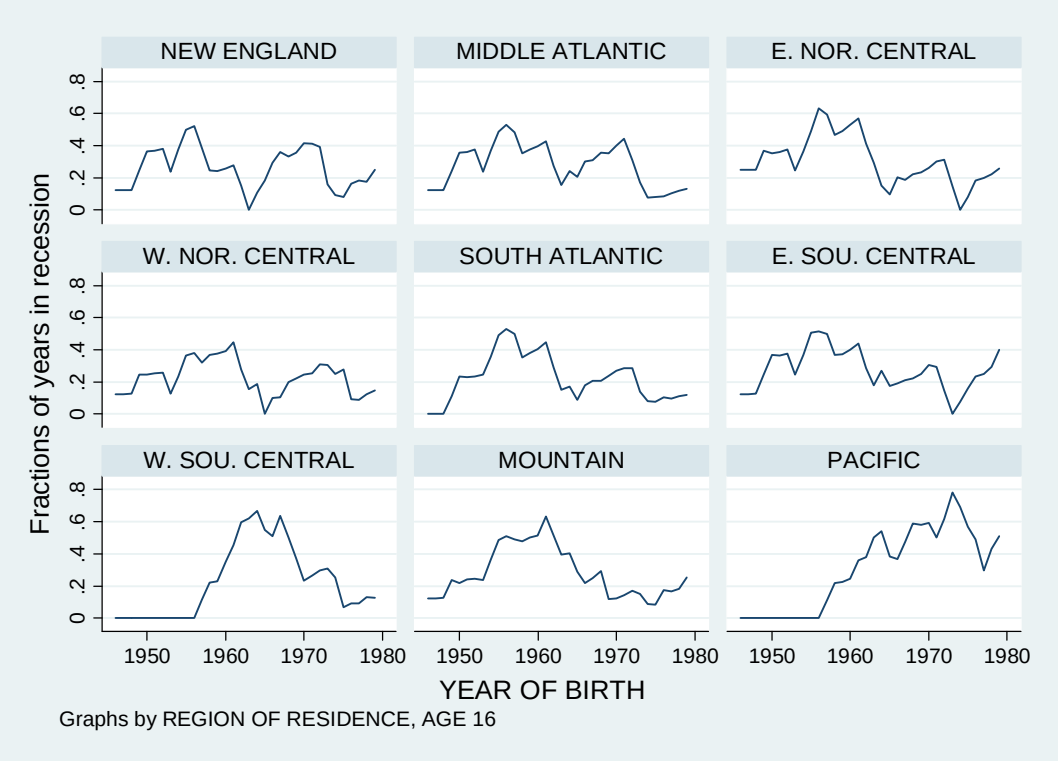


Figure 4
Macroeconomic events during the "impressionable years"- At least one boom

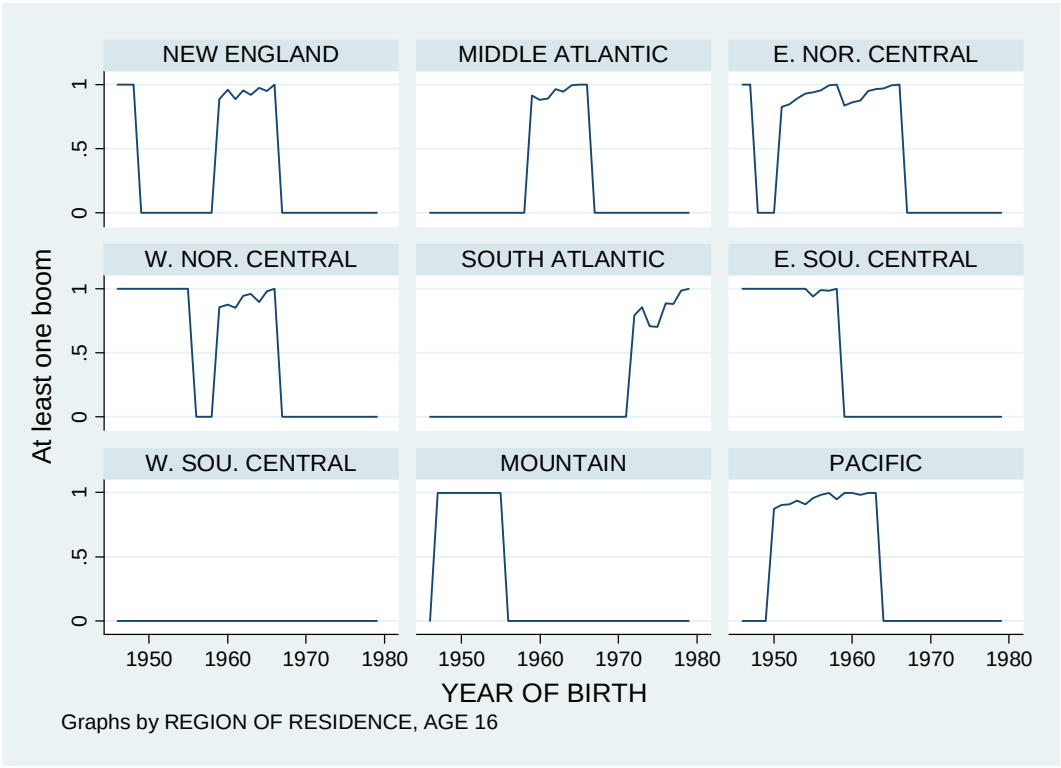


Figure 5
Macroeconomic events during the "impressionable years"- Average regional GDP

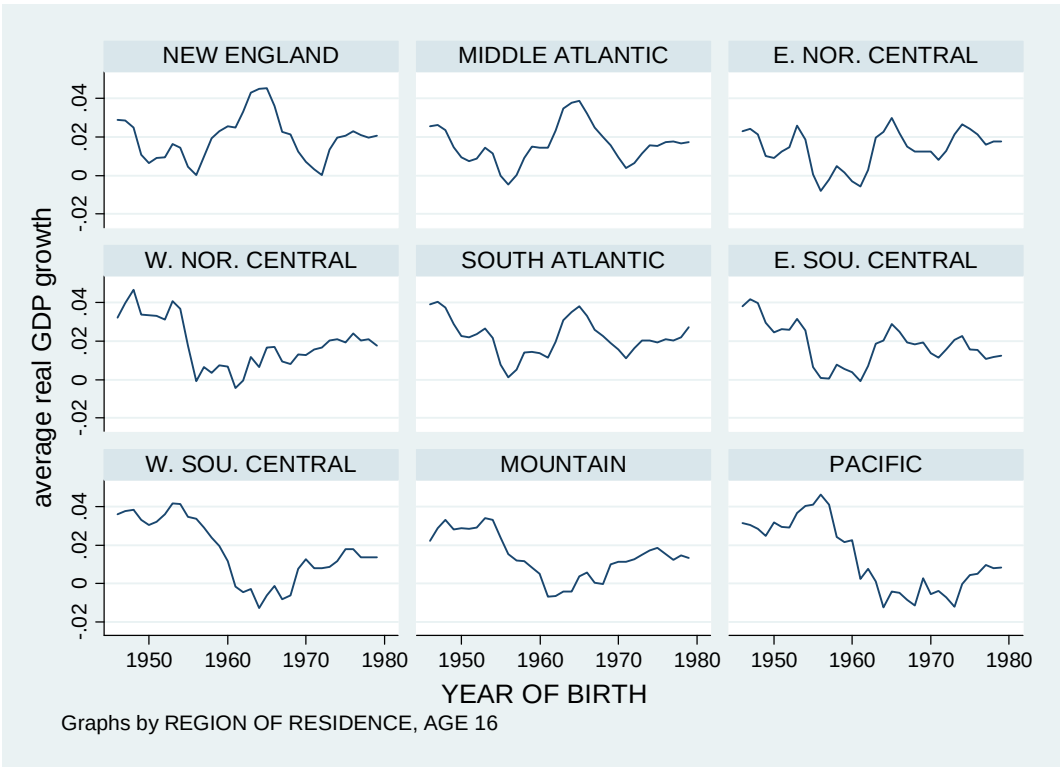


Figure 6
Macroeconomic events during the "impressionable years"- S.D. of regional GDP

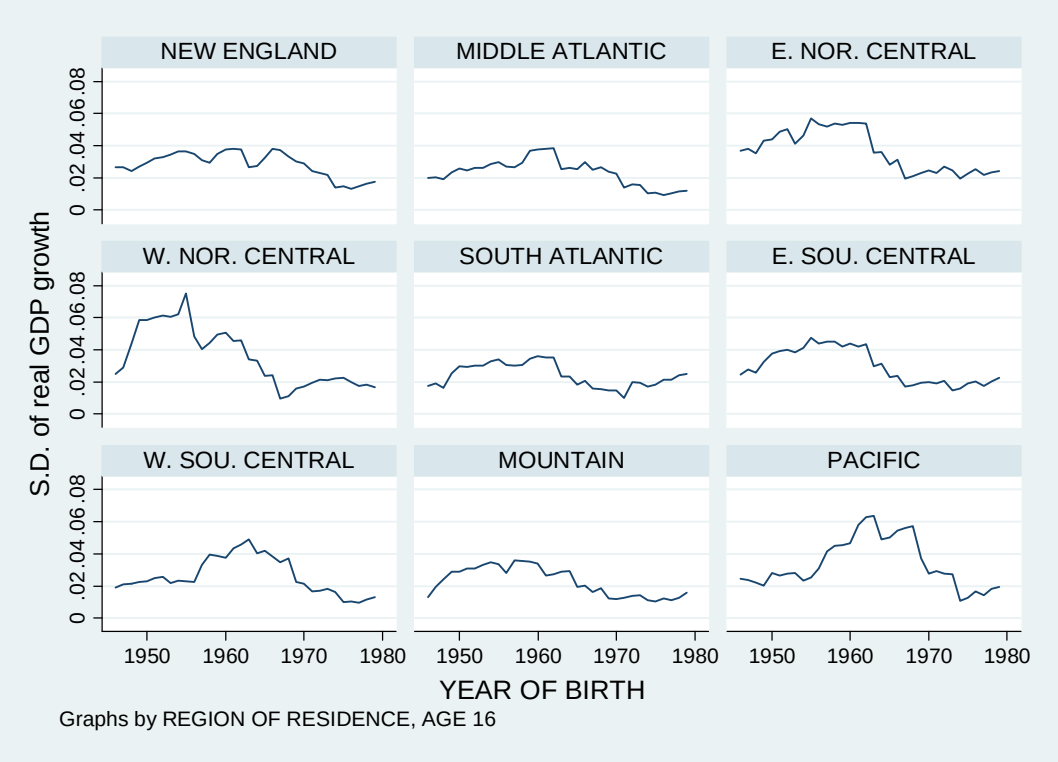
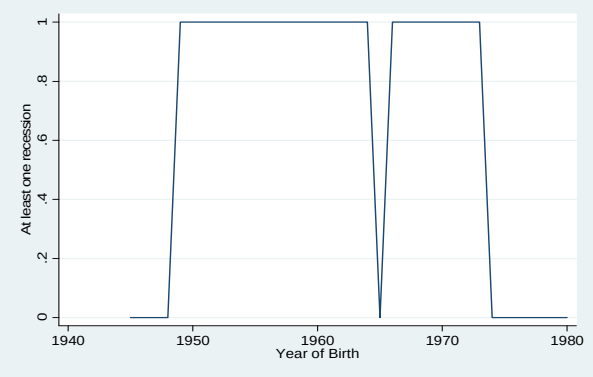
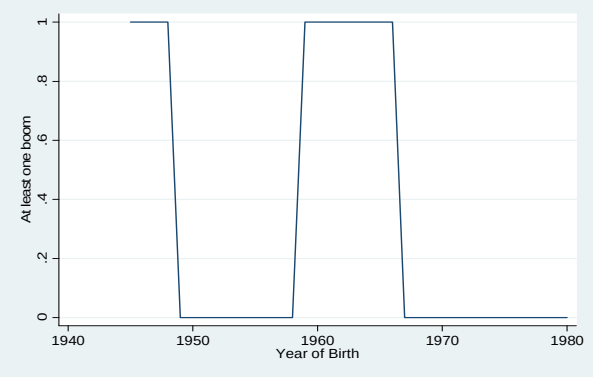


Figure 7
Macroeconomic Events during Impressionable Years, by Year of Birth- National GDP

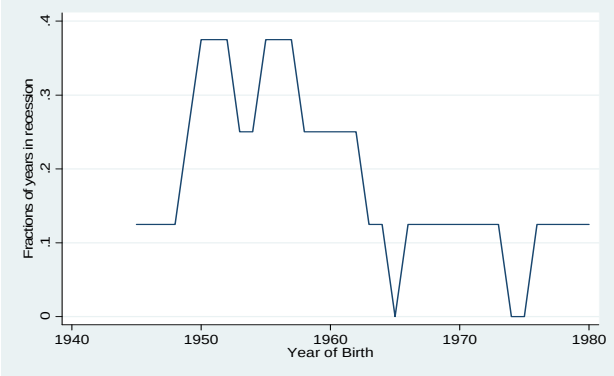
At least one recession



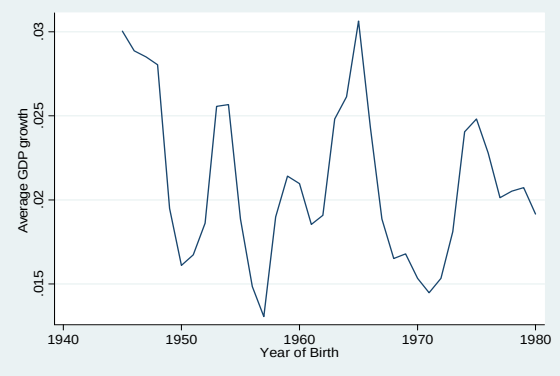
At least one boom



Fraction of years in recession



Average GDP growth



S.D. of GDP growth

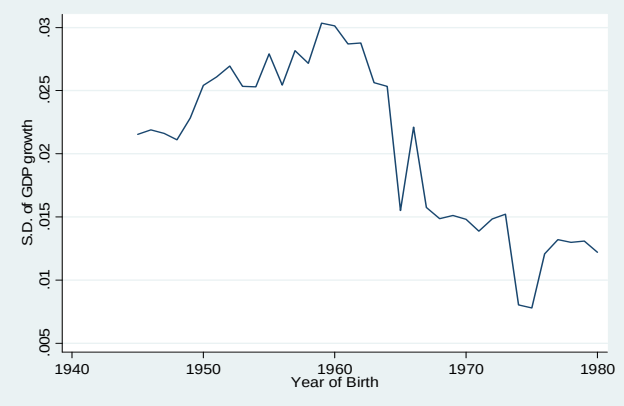


Table 1
General Social Survey, Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Help poor	23,603	3.11	1.18	1	5
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
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
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
Income at 16	37,806	2.78	.86	1	5
Low income at 16	37,806	.08	.28	0	1
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
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	(5) Help poor	(6) Help poor
At least one year in recession	**.040**	**.053**	**.041**	**.049**	**.050**	**.040**
during impressionable years	**(.019)****	**(.019)*****	**(.021)***	**(.019)****	**(.019)*****	**(.023)***
Male	-.196	-.170	-.170	-.163	-.162	-.191
	(.017)***	(.019)***	(.019)***	(.019)***	(.019)***	(.021)***
Age	-.016	.013	.011	.013	.012	.008
	(.005)***	(.006)**	(.006)*	(.006)**	(.006)**	(.007)
Age squared	.000	-.000	-.000	-.000	-.000	-.000
	(.000)*	(.000)**	(.000)**	(.000)***	(.000)**	(.000)*
Black	.658	.558	.557	.551	.541	.534
	(.026)***	(.027)***	(.027)***	(.027)***	(.027)***	(.035)***
Married		-.084	-.083	-.061	-.064	-.084
		(.020)***	(.020)***	(.021)***	(.021)***	(.022)***
Employed		-.076	-.076	-.078	-.076	-.065
		(.026)***	(.026)***	(.026)***	(.026)***	(.030)**
Unemployed		.014	.013	.002	.002	-.000
		(.058)	(.058)	(.059)	(.059)	(.062)
Less than high school		.380	.383	.354	.336	.331
		(.033)***	(.034)***	(.033)***	(.033)***	(.041)***
High school		.106	.107	.091	.084	.070
		(.019)***	(.019)***	(.020)***	(.019)***	(.023)***
Family income		-.036	-.036			
		(.005)***	(.005)***			
Father less than high school						.120
						(.024)***
Dummies for father occupation						x
Income dummies				x	x	x
Income at 16 dummies					x	x
Region fixed effects	x	x	x	x	x	x
Region at 16 fixed effects	x	x	x	x	x	x
Year effects	x	x	x	x	x	x
Cohort fixed effects			x			
Region*year fixed effects						x
Observations	15,353	14,113	14,113	14,113	14,113	11,215
R-squared	.07	.09	.09	.10	.10	.10

Notes: [1] Standard errors are clustered at the region*time level; * significant at 10%, ** significant at 5%, *** significant at 1%; [2] *At least one year in recession* 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 the critical age period of reference. 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; [3] *Help Poor* is the answer to the following question from the General Social Survey. "Some people think 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?".

Table 3
Confidence in Congress and recessions during impressionable years

	(1) Congress	(2) Congress	(3) Congress	(4) Congress	(5) Congress	(6) Congress
At least one year in recession	**-.025**	**-.022**	**-.006**	**-.021**	**-.022**	**-.029**
during impressionable years	**(.011)****	**(.011)***	**(.012)**	**(.011)***	**(.011)***	**(.012)****
Male	-.057	-.052	-.052	-.052	-.052	-.050
	(.008)***	(.009)***	(.009)***	(.009)***	(.009)***	(.010)***
Age	-.015	-.016	-.017	-.016	-.015	-.016
	(.003)***	(.003)***	(.003)***	(.003)***	(.003)***	(.003)***
Age squared	.000	.000	.000	.000	.000	.000
	(.000)***	(.000)***	(.000)***	(.000)***	(.000)***	(.000)***
Black	-.028	-.035	-.034	-.034	-.028	-.021
	(.015)*	(.013)**	(.013)**	(.013)**	(.013)**	(.017)
Married		.002	.002	.000	.001	.001
		(.010)	(.010)	(.011)	(.011)	(.011)
Employed		-.011	-.010	-.011	-.012	-.014
		(.012)	(.012)	(.012)	(.012)	(.014)
Unemployed		-.019	-.016	-.017	-.019	-.045
		(.027)	(.027)	(.027)	(.027)	(.029)
Less than high school		-.023	-.026	-.021	-.015	-.005
		(.016)	(.016)	(.016)	(.016)	(.019)
High school		-.021	-.022	-.019	-.019	-.018
		(.010)**	(.010)**	(.010)**	(.010)*	(.012)
Family income		-.001	-.001			
		(.002)	(.002)			
Father less than high school						-.022
						(.012)*
Dummies for father occupation						x
Income dummies				x	x	x
Income at 16 dummies					x	x
Region fixed effects	x	x	x	x	x	x
Region at 16 fixed effects	x	x	x	x	x	x
Year effects	x	x	x	x	x	x
Cohort fixed effects			x			
Region*year fixed effects						x
Observations	19,687	18,222	18,222	18,222	18,222	14,575
R-squared	.05	.05	.05	.05	.05	.07

Notes: [1] Standard errors are clustered at the region*time level; * significant at 10%, ** significant at 5%, *** significant at 1%; [2] *At least one year in recession* 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 the critical age period of reference. 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; [3] *Congress* is the answer to the following question from the General Social Survey. "I am going to name some institutions in this country (the Congress in this case). 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)".

Table 4
Confidence in the exec. branch of the federal govern. and recessions during impress. years

	(1) Fed. gov.	(2) Fed. gov.	(3) Fed. gov.	(4) Fed. gov.	(5) Fed. gov.	(6) Fed. gov.
At least one year in recession	**-.037**	**-.039**	**-.029**	**-.039**	**-.040**	**-.046**
during impressionable years	**(.011)*** **	**(.011)*** **	**(.012)** **	**(.011)*** **	**(.011)*** **	**(.013)*** **
Male	-.018	-.014	-.014	-.015	-.014	-.013
	(.010)*	(.011)	(.011)	(.011)	(.011)	(.011)
Age	-.009	-.012	-.013	-.012	-.011	-.012
	(.003)***	(.003)***	(.003)***	(.003)***	(.003)***	(.004)***
Age squared	.000	.000	.000	.000	.000	.000
	(.000)*	(.000)**	(.000)**	(.000)**	(.000)**	(.000)*
Black	-.112	-.112	-.111	-.111	-.103	-.099
	(.023)***	(.022)***	(.022)***	(.022)***	(.022)***	(.019)***
Married		.024	.025	.021	.023	.027
		(.012)**	(.012)**	(.012)*	(.012)*	(.012)**
Employed		-.022	-.022	-.022	-.024	-.032
		(.015)	(.015)	(.015)	(.015)	(.015)**
Unemployed		-.038	-.036	-.037	-.039	-.053
		(.026)	(.026)	(.027)	(.027)	(.032)*
Less than high school		-.053	-.055	-.049	-.040	-.052
		(.019)***	(.019)***	(.019)**	(.019)**	(.021)**
High school		-.054	-.054	-.051	-.050	-.046
		(.013)***	(.013)***	(.013)***	(.013)***	(.013)***
Family income		.002	.002			
		(.002)	(.002)			
Father						-.029
						(.013)**
Dummies father occ.						x
Income dummies				x	x	x
Income at 16 dummies					x	x
Region fixed effects	x	x	x	x	x	x
Region at 16 fixed effects	x	x	x	x	x	x
Year effects	x	x	x	x	x	x
Cohort fixed effects			x			
Region*year fixed effects						x
Observations	19,672	18,211	18,211	18,211	18,211	14,565
R-squared	.04	.05	.05	.05	.05	.07

Notes: [1] Standard errors are clustered at the region*time level; * significant at 10%, ** significant at 5%, *** significant at 1%; [2] *At least one year in recession* 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 the critical age period of reference. 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; [3] *Fed. gov.* is the answer to the following question from the General Social Survey. "I am going to name some institutions in this country (the executive branch of the federal government in this case). 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)".

Table 5
Political ideology and recessions during impressionable years

	(1) Pol. Ideol.	(2) Pol. Ideol.	(3) Pol. Ideol.	(4) Pol. Ideol.	(5) Pol. Ideol.	(6) Pol. Ideol.
At least one year in recession	**-.005**	**-.002**	**-.039**	**-.003**	**-.003**	**-.020**
during impressionable years	**(.019)**	**(.020)**	**(.020)***	**(.020)**	**(.020)**	**(.023)**
Male	-.115	-.144	-.144	-.142	-.142	-.164
	(.015)***	(.016)***	(.015)***	(.015)***	(.015)***	(.020)***
Age	-.022	-.007	-.013	-.007	-.007	-.006
	(.005)***	(.006)	(.006)**	(.006)	(.006)	(.007)
Age squared	.000	.000	.000	.000	.000	.000
	(.000)**	(.000)	(.000)	(.000)	(.000)	(.000)
Black	.320	.240	.239	.238	.236	.317
	(.030)***	(.031)***	(.031)***	(.031)***	(.030)***	(.034)***
Married		-.327	-.327	-.321	-.319	-.325
		(.020)***	(.020)***	(.020)***	(.020)***	(.022)***
Employed		.081	.078	.081	.083	.097
		(.024)***	(.024)***	(.024)***	(.024)***	(.028)***
Unemployed		.115	.110	.113	.117	.150
		(.051)**	(.051)**	(.051)**	(.050)**	(.059)**
Less than high school		-.051	-.047	-.060	-.059	.026
		(.034)	(.034)	(.034)*	(.034)*	(.039)
High school		-.121	-.120	-.127	-.124	-.081
		(.021)***	(.021)***	(.021)***	(.021)***	(.022)***
Family income		-.013	-.012			
		(.004)***	(.004)***			
Father less than high school						-.057
						(.023)**
Dummies father occupation						x
Income dummies				x	x	x
Income at 16 dummies					x	x
Region fixed effects	x	x	x	x	x	x
Region at 16 fixed effects	x	x	x	x	x	x
Year effects	x	x	x	x	x	x
Cohort fixed effects			x			
Region*year fixed effects						x
Observations	26,263	24,226	24,226	24,226	24,226	18,556
R-squared	.03	.05	.05	.05	.05	.07

Notes: [1] Standard errors are clustered at the region*time level; * significant at 10%, ** significant at 5%, *** significant at 1%; [2] *At least one year in recession* 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 the critical age period of reference. 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; [3] *Political ideology* is the answer to the following question from the General Social Survey. "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 (7) to extremely conservative (1). What would be your scale?"

Table 6
Beliefs and other macroeconomic events during impressionable years

	(1)	(2)	(3)
	Help poor	Congress	Fed. gov.
Fraction of years in recessions	.148	-.093	-.109
during impressionable years	(.060)**	(.030)***	(.033)***
Observations	11,215	14,575	14,565
R-squared	.10	.07	.07
	Help poor	Congress	Fed. gov.
Fraction of years in booms	-.186	.104	.105
during impressionable years	(.059)***	(.029)***	(.032)***
Observations	16,696	24,009	23994
R-squared	.10	.06	.06
	Help poor	Congress	Fed. gov.
Average regional GDP growth	-2.178	.954	1.206
during impressionable years	(.767)***	(.374)**	(.409)***
Observations	11,215	14,575	14,565
R-squared	.10	.07	.07
	Help poor	Congress	Fed. gov.
St. dev. of regional GDP growth	1.753	-1.487	-1.605
during impressionable yeears	(.887)**	(.433)***	(.472)***
Observations	10,971	14,174	14,168
R-squared	.10	.07	.07

Notes: [1] Specification follows column 6 of Tables 2. Only the coefficients of interest are reported. Standard errors are clustered at the region*time level. *** significant at 1%, ** significant at 5%, * significant at 10* [2] *Fraction of years in recessions* represents the fraction of years spent in recessions (defined as negative regional GDP growth) during the impressionable years. *Fraction of years in booms* represents the fraction of years spent in booms (defined as positive regional GDP growth) during the impressionable years). *Average regional GDP growth* represents the regional GDP growth during the impressionable years and *st.dev. of regional GDP growth* represents the standard deviation of regional GDP growth during the impressionable years.

Table 7
Beliefs and recessions during impressionable years, interaction with background during youth

	(1) Help poor	(2) Congress	(3) Fed. gov.
At least one year in recession during impressionable years	**.042 (.023)***	**-.029 (.012)****	**-.045 (.013)*****
Low income at 16	.212 (.075)***	-.012 (.035)	-.048 (.038)
Recession*low income at 16	-.106 (.126)	-.088 (.064)	-.040 (.070)
Observations	11,215	14,575	14,565
R-squared	.10	.07	.07
	Help poor	Congress	Fed. gov.
At least one year in recession during impressionable years	**.049 (.027)***	**-.029 (.013)****	**-.047 (.015)*****
Father less than high school	.132 (.030)***	-.013 (.014)	-.030 (.016)*
Recession*father less than high school	-.030 (.045)	-.022 (.022)	.002 (.024)
Observations	11,215	14,575	14,565
R-squared	.10	.07	.07

Notes: [1] Specification follows column 6 of Tables 2. Only the coefficients of interest are reported. Standard errors are clustered at the region*time level. *** significant at 1%, ** significant at 5%, * significant at 10*; [2] *At least one year in recession* 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 the critical age period of reference. 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.

Table 8
Beliefs and recessions during impressionable years, restricting the sample to non-movers

	(1) Help poor	(2) Congress	(3) Fed. gov.
At least one year in recession	**.048**	**-.034**	**-.042**
during impressionable years	**(.023)****	**(.015)****	**(.014)*****
Male	-.190	-.051	-.027
	(.023)***	(.011)***	(.013)**
Age	.015	-.016	-.014
	(.008)*	(.004)***	(.004)***
Age squared	-.000	.000	.000
	(.000)**	(.000)***	(.000)**
Black	.530	-.018	-.096
	(.040)***	(.021)	(.027)***
Married	-.070	.003	.018
	(.025)***	(.013)	(.014)
Employed	-.084	-.009	-.018
	(.032)***	(.017)	(.019)
Unemployed	-.066	-.054	-.063
	(.072)	(.033)	(.033)*
Less than high school	.318	-.014	-.049
	(.050)***	(.021)	(.025)*
High school	.094	-.024	-.049
	(.026)***	(.012)*	(.015)***
Father less than high school	.122	-.016	-.023
	(.026)***	(.014)	(.015)
Dummies father occupation	x	x	x
Income dummies	x	x	x
Income at 16 dummies	x	x	x
Region fixed effects	x	x	x
Region at 16 fixed effects	x	x	x
Year effects	x	x	x
Region*year fixed effects	x	x	x
Observations	8,913	11,691	11,678
R-squared	.09	.05	.06

[1] Standard errors are clustered at the region*time level. *** significant at 1%, ** significant at 5%, * significant at 10%; [2] Specification follows column 6 of Tables 2. [3] [2] *At least one year in recession* 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 the critical age period of reference. 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.

Table 9
Recent recession versus recession during impressionable years

	(1) Help poor	(2) Congress	(3) Fed. gov.
At least one year in recession	**.042**	**-.026**	**-.045**
during impressionable years	**(.021)****	**(.013)****	**(.013)*****
Current recession	.003	.008	.036
	(.044)	(.016)	(.019)*
Male	-.190	-.049	-.011
	(.020)***	(.010)***	(.012)
Age	.008	-.016	-.012
	(.007)	(.003)***	(.003)***
Age	-.000	.000	.000
	(.000)*	(.000)***	(.000)**
Black	.531	-.020	-.101
	(.036)***	(.019)	(.025)***
Married	-.084	.000	.025
	(.023)***	(.011)	(.013)*
Employed	-.064	-.015	-.035
	(.030)**	(.015)	(.016)**
Unemployed	-.012	-.043	-.060
	(.063)	(.029)	(.031)*
Less than high school	.336	-.001	-.050
	(.043)***	(.019)	(.022)**
High school	.072	-.014	-.047
	(.022)***	(.011)	(.013)***
Father less than high school	.116	-.021	-.026
	(.023)***	(.013)	(.014)*
Dummies father occupation	x	x	x
Income dummies	x	x	x
Income at 16 dummies	x	x	x
Region at 16 fixed effects	x	x	x
Observations	11,215	14,575	14,565
R-squared	.09	.06	.05

[1] Standard errors are clustered at the region*time level. *** significant at 1%, ** significant at 5%, * significant at 10%; [2] Specification follows column 6 of Tables 2. [3] *At least one year in recession* 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 the critical age period of reference. 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; *Current recession* is a dummy equal to 1 if the individual experienced at least one year in recession in the 8 years prior to the time of the interview.

Table 10
Recessions during impressionable years and other beliefs

	(1) World image	(2) Homosexuals allowed to speak	(3) Homosexuals allowed to teach
At least one year in recession	**-.018**	**-.010**	**-.004**
during impressionable years	**(.038)**	**(.007)**	**(.008)**
Male	-.253	-.026	-.045
	(.034)***	(.006)***	(.007)***
Age	.027	.006	.002
	(.013)**	(.002)***	(.002)
Age squared	-.000	-.000	-.000
	(.000)	(.000)***	(.000)
Black	-.195	.005	.027
	(.055)***	(.011)	(.012)**
Married	-.093	-.051	-.065
	(.036)**	(.007)***	(.008)***
Employed	.044	-.011	.010
	(.048)	(.009)	(.010)
Unemployed	-.181	-.013	.022
	(.109)*	(.019)	(.021)
Less than high school	-.414	-.214	-.264
	(.067)***	(.012)***	(.014)***
High school	-.286	-.080	-.104
	(.037)***	(.007)***	(.008)***
Father less than high school	-.084	-.051	-.045
	(.039)**	(.007)***	(.008)***
Dummies father occupation	x	x	x
Income dummies	x	x	x
Income at 16 dummies	x	x	x
Region fixed effects	x	x	x
Region at 16 fixed effects	x	x	x
Year effects	x	x	x
Region*year fixed effects	x	x	x
Observations	7,878	13,082	12,976
R-squared	.06	.13	.14

[1] Standard errors are clustered at the region*time level. *** significant at 1%, ** significant at 5%, * significant at 10%; [2] Specification follows column 6 of Tables 2. [3] *At least one year in recession* 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 the critical age period of reference. 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; [4] *World Image* is the answer to the following question: "People have different images of the world and human nature. We would like to know the kinds of images you have. Here is a card with sets of contrasting images. On a scale of 1-7 where would you place your image of the world and human nature between two contrasting images? The world is basically filled with evil and sin (1) and there is too much goodness in the world which hint at God's goodness" *Homosexuals allowed to speak and to teach* are the answers to the following questions: consider a man who admits that he is a homosexual. Suppose this admitted homosexual wanted to make a speech in your community. Should he be allowed to speak or not? Yes, allowed to speak (1), not allowed (0), and should such a person be allowed to teach in a college or university, or not? Yes, allowed to teach (1), not allowed (0).

Table 11
Recessions during impressionable years and generalized trust

	(1) Trust	(2) Trust	(3) Trust	(4) Trust	(5) Trust	(6) Trust
At least one year in recession	**.006**	**.002**	**.003**	**.003**	**.002**	**-.002**
during impressionable years	**(.007)**	**(.007)**	**(.009)**	**(.007)**	**(.007)**	**(.010)**
Male	.032	.020	.020	.018	.018	.014
	(.007)***	(.007)***	(.007)***	(.007)**	(.007)**	(.009)*
Age	.016	.003	.002	.003	.004	.008
	(.002)***	(.002)	(.002)	(.002)	(.002)**	(.003)***
Age squared	-.000	.000	.000	.000	.000	-.000
	(.000)***	(.000)	(.000)	(.000)	(.000)	(.000)
Black	-.216	-.176	-.176	-.174	-.166	-.165
	(.011)***	(.012)***	(.012)***	(.012)***	(.012)***	(.014)***
Married		.017	.017	.010	.013	.026
		(.009)*	(.009)**	(.009)	(.009)	(.009)***
Employed		.012	.012	.012	.012	.007
		(.009)	(.009)	(.009)	(.009)	(.012)
Unemployed		-.024	-.023	-.021	-.020	-.047
		(.019)	(.018)	(.018)	(.018)	(.025)*
Less than high school		-.297	-.298	-.289	-.277	-.261
		(.013)***	(.013)***	(.013)***	(.013)***	(.016)***
High school		-.171	-.171	-.165	-.161	-.148
		(.008)***	(.008)***	(.008)***	(.008)***	(.010)***
Income		.010	.010			
		(.002)***	(.002)***			
Father less than high school						-.062
						(.010)***
Dummies father occupation	x	x	x	x	x	x
Income dummies	x	x	x	x	x	x
Income at 16 dummies	x	x	x	x	x	x
Region fixed effects	x	x	x	x	x	x
Region at 16 fixed effects	x	x	x	x	x	x
Year effects	x	x	x	x	x	x
Cohort effects		x				
Region*year fixed effects	x	x	x	x	x	x
Observations	19,261	17,273	17,273	17,273	17,273	12,953
R-squared	.07	.12	.12	.12	.12	.13

[1] Standard errors are clustered at the region*time level. *** significant at 1%, ** significant at 5%, * significant at 10%; [2] *At least one year in recession* 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 the critical age period of reference. 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; [3] *Trust* 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 cannot be too careful in life (taking the value of 0).