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The recession generation? Age-period-cohort dynamics of political trust in six countries severely affected by the 2008 crisis

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A potential puzzle has emerged in the study of political trust: recent studies indicate that individuals' trust judgements are remarkably stable over their life course, but many other studies have observed long-term declines of trust in the aggregate. In particular, trust clearly declined substantially during and following the 2008 economic (and political) crisis in many European countries severely affected by it: especially Greece, Iceland, Ireland, Italy, Portugal and Spain. In this study, I focus on these countries and ask to what extent the crisis may have resulted in a "recession generation" of citizens who were in their formative years at the time and may have adopted less trusting political orientations that have persisted since, more or less independent of life-cycle and period effects. To answer this question, I present descriptive visualizations of trust levels by citizens' age over time and conduct statistical age-period-cohort (APC) analysis of political trust levels using generalized additive models (GAMs) on data from the Eurobarometer (1997–2022) and the European Values Study/World Values Survey (EVS/WVS). The findings are inconclusive: descriptive comparisons of age-by-year diagonals suggest this cohort of citizens may indeed have lower levels of trust than older and younger cohorts, above and beyond the effects of life cycle and period—but the results from GAMs differ between countries and data sources and only show the expected cohort effect in three cases. These tentative results have implications for our understanding of the nature of political trust judgements and the potential socializing effects of major political events on citizens attitude-formation, but they await confirmation in future studies which will have the benefit of longer-term data and potentially further innovations in APC analysis.

KEYWORDS

political trust, generations, socialization, age-period-cohort analysis, public opinion

Introduction

A bit of a puzzle has started to emerge in the study of political trust dynamics: on one hand, *aggregate* levels of trust have been gradually declining in many countries in recent decades (Dalton, 2004, 2017; Torcal, 2014; Jennings et al., 2017; Dassonneville and McAllister, 2021) and took a particular dive in many countries following the 2008 financial crisis (Armingeon and Guthmann, 2014; Kroknes et al., 2015; Önnudóttir et al., 2021). On the other hand, *individuals* appear to be very reluctant to substantially change their trust judgements over time, even during times of political turmoil (Kiley and Vaisey, 2020; Devine and Valgarðsson, 2023).

A potential solution to this apparent puzzle is that of generational socialization. As Ryder (1965, p. 844) put it almost 60 years ago “The continual emergence of new participants in the social process and the continual withdrawal of their predecessors compensate the society for limited individual flexibility. For every species the inevitability of death impels the development of reproduction and thus variation and evolution; the same holds for societies.” Put slightly less morbidly: as new generations of citizens come of age, their trust orientations are shaped by the circumstances and experiences of their formative years, and these then stay relatively stable throughout their lifetime (Hyman, 1959; Newcomb et al., 1967; Jennings and Niemi, 1981). If younger generations are socialized with lower (or different) levels of trust than older generations, this may explain aggregate declines (changes) as the younger gradually replace the older in the electorate, even if adult individuals do not change their trust orientations much over time.

This “problem of generations” (Mannheim, 1928) has been a well-known feature of social and political life for a long time, with various studies in political science showing how people’s political values (Grasso et al., 2017); party allegiances (Niemi and Jennings, 1991; Tilley, 2002; Bartels and Jackman, 2014); voter turnout (Franklin et al., 2004) and other types of participation (Grasso, 2016); and various other political attitudes and behaviors (Jennings and Niemi, 1981; Jennings, 1996; Jennings et al., 2009) tend to be shaped in their formative years and remain mostly stable after that, resulting in generational differences that arise from the different contexts of their formative years. However, to date almost no attention has been paid to generational differences in political trust, and the one exception was published almost 20 years ago (Dalton, 2004).

In this study, I start filling that research gap by analyzing the generational dynamics of political trust in Europe in the 21st century. More specifically, instead of a more comprehensive review of general generational dynamics in the whole continent, I will focus attention on a sort of “most-likely” test of the potential for major political events to act as agents of socialization for citizens in their formative years: the 2008 economic crisis in Europe. As such, I ask: did the 2008 crisis shape a “recession generation” of distrusting citizens in badly affected countries, even when accounting for the general (period) effect of the crisis on the public’s trust levels in those years (Armingeon and Guthmann, 2014; Kroknes et al., 2015; Foster and Frieden, 2017; Devine, 2021)?

To that effect, I explore data from the two longest running and most comprehensive cross-national survey projects that include measures of political trust: the Eurobarometer from 1997 to 2022 and the European Values Study/World Values Survey from 1981 to 2021. I focus on nine countries which were severely affected by the 2008 crisis both in terms of economic impact and the shock to citizens’ political trust: Greece, Iceland, Ireland, Italy, Portugal and Spain. To disentangle potential generational (cohort) socialization effects from those of period and life-cycle, I use generalized additive regression models (GAMs) to estimate the non-linear effects of birth year on political trust, when controlling for year of survey and a categorical variable for age groups (thus constraining the model to solve the identification problem). The findings are inconclusive: descriptive comparisons of age-by-year diagonals suggest this

cohort of citizens may indeed have lower levels of trust than older and younger cohorts, above and beyond the effects of life cycle and period—but the results from GAMs differ between countries and data sources and only show the expected cohort effect in three out of ten country-source combinations.

Theory

The sources of individuals’ political attitudes are a fundamental topic of study—and contention—in the political sciences. Some see attitudes such as party identification and political trust as shaped by people’s rational evaluations of e.g., the prospective performance of political actors at any given time (Achen, 1992; Page and Shapiro, 1992) and how those match with people’s own social group identity (Gerber and Green, 1998). Others argue that attitudes such as trust are shaped by less rationalistic factors, such as people’s biological and genetic personality traits (Cawvey et al., 2017; Mondak et al., 2017) or by the media’s framing of politics (Barton and Piston, 2022). Another historically dominant, albeit receding, view is that the vast majority of people simply do not hold coherent political attitudes; that their answers to survey questions are basically random and at best simply taken from elite discourse (Zaller, 1992; Converse, 2006).

A perspective that lies somewhere between rationalistic and non-rationalistic explanations is that of generational socialization: that people adopt most of their attitudes in their formative years (late adolescence and early adulthood) and that those attitudes then stay stable throughout the rest of the life-course, largely regardless of any new experiences and information acquired (Mannheim, 1928; Hyman, 1959; Ryder, 1965; Niemi and Hepburn, 1995; Kiley and Vaisey, 2020). As such, attitudes may be adopted for rationalist reasons in early adulthood (Achen, 2002)—although they may also simply be transmitted from parents or other socializing agents regardless of rational considerations (Jennings and Niemi, 1968; Jennings et al., 2009). Whichever may be the case, this theory holds that after early adulthood, attitudes are not primarily shaped by rational updating given new experiences and information, but instead shaped by considerations prevalent in the individual’s past; dispositions are settled early in life by experiences that may have no rational bearing on later judgements (see also Kiley and Vaisey, 2020). This perspective has a long tradition in the fields of sociology and social psychology: its modern treatment is often traced back to Karl Mannheim, although he himself reviewed various prior discussions of the importance of generational replacement for cultural evolution, including by Hume and Comte (Mannheim, 1928, p. 276–277).

Later empirical studies have indeed supported these early suspicions: people are most susceptible to changing their attitudes in late adolescence and early adulthood (Visser and Krosnick, 1998), their experiences from those formative years form “collective memories” that stay salient throughout adulthood (Schuman and Scott, 1989) and their political attitudes stay mostly stable after those formative years (Jennings and Niemi, 1981; Jennings, 1996; Jennings et al., 2009). These insights have spawned a large literature of studies of generational/cohort effects, that attempt to disentangle the role of *generational* socialization effects from

those of progressing through the *life-cycle* on one hand and being influenced by contemporary contexts of the *period* on the other (Yang et al., 2004; Bartels and Jackman, 2014; Grasso, 2014; Neundorff and Niemi, 2014).

Such “age-period-cohort” models have in recent times been applied to explore the drivers of change over time in various politically salient phenomena: including value change (Inglehart and Baker, 2000; Grasso et al., 2017), party identification (Niemi and Jennings, 1991; Tilley, 2002; Bartels and Jackman, 2014), voter turnout (Franklin et al., 2004; Blais and Rubenson, 2013; Valgarðsson, 2019), alternative means of participation (Grasso, 2016; Grasso et al., 2019), political knowledge (Jennings, 1996) and social trust (Jennings and Stoker, 2004). However, one fundamental topic of study in political science has been largely ignored in this literature thus far: political trust. The one exception¹ is Russell Dalton’s (Dalton, 2004, 2005) exploration of linear interactions between age and period in several countries in the 20th century, which suggested that in many of them, young people were less trusting relative to older citizens toward the end of the century than decades before. This provides an interesting indication of the importance of generational socialization for political trust, but, as far as I am aware, no studies have been published on the topic since.

Two recent empirical studies of individual-level panel data also suggest that people’s political trust judgements are most susceptible to change in their formative years—and mostly stable after that (Kiley and Vaisey, 2020; Devine and Valgarðsson, 2023). However, studies have long documented aggregate changes in levels of political trust over time within societies: for instance, concerns about declining political trust in the United States date back at least to the 1970s (Miller, 1974; Lipset and Schneider, 1983; Dalton, 2004, 2017; Citrin and Stoker, 2018) and the same appears to apply at least to several other established democracies (Dalton, 2004, 2017; Torcal, 2014; Jennings et al., 2017; Dassonneville and McAllister, 2021).

In the short-term, dynamic changes in trust on the aggregate might be explained by individuals temporarily adjusting their trust judgements in response to events and political contexts; the two recent panel studies (Kiley and Vaisey, 2020; Devine and Valgarðsson, 2023) both suggest that this does happen but that individuals relatively quickly tend to revert back to their baseline levels of trust. As such, those findings indicate that any *long-term* changes in trust are likely to be driven largely by generational replacement, and in turn by the different social and political contexts in which successive generations are socialized.

This study explores that explanation by focusing on a sort of most-likely scenario of a formative experience which may have had a lasting effect on the generation of citizens that came of age when it happened: the 2008 economic and political crisis in Europe. Multiple studies have shown that this was one of the biggest shocks to citizens’ political trust across the continent since survey measures began (Armingeon and Guthmann, 2014; Foster and Frieden, 2017; Ruiz-Rufino and Alonso, 2017; Schraff and Schimmelfennig, 2019; Devine, 2021), particularly in the peripheral (debtor) Eurozone

countries most severely affected by the crisis but also in countries such as Iceland and Ireland, which saw practically their entire banking systems collapse (Regling and Watson, 2010; Ómarsdóttir and Valgarðsson, 2020; Önnudóttir et al., 2021).

Since trust as usually conceptualized as belief in the trustworthiness of others, usually understood as believing that they would produce good outcomes even if left untended (Gamson, 1968; Easton, 1975), we would expect a severe economic crisis in a country to affect trust levels: it tangibly (often severely) affects citizens’ personal lives and sends a clear signal that the government has not managed the economy well (i.e., produced good outcomes for society). Previous studies have shown that the political trust levels tend to respond to changes in objective economic performance (van Erkel and van der Meer, 2016) and we would expect a dramatic fall in GDP growth and public services (due to austerity), coupled with a substantial rise in unemployment, government debt to rationally affect people’s judgements of the trustworthiness of government. The dramatic nature of the crisis, media coverage and subsequent economic bailouts in some countries may also have affected trust levels through citizens’ perceptions of their governments’ integrity (due to corruption scandals associated with the crisis) and democratic responsiveness (as governments had very little room to implement the public will when faced with stringent requirements made by the IMF, EU and the general need for austerity) (Ruiz-Rufino and Alonso, 2017; Schraff and Schimmelfennig, 2019). In addition, the generation of citizens coming of age during the crisis likely struggled more than older (and perhaps, although less clearly, younger) generations to start a professional career and buy their own home (see e.g., Smets, 2016). As such, it seems entirely rational for citizens to lose trust during (and immediately following) the crisis, but a rational account of trust would also expect those trust levels to recover as the economy did (as it did in many, albeit not all, of these countries), or at a minimum that the extent to which they did would not depend on the age at which citizens experienced the crisis. In this study, we will explore that expectation.

Analytical approach

The 2008 financial recession, and the economic and political crisis that followed to different extents in most countries of the world, greatly affected levels of political trust, in particular in several European countries. If the social and political contexts in an individual’s formative years shapes their trust judgements into adulthood, we would thus expect the generation of citizens who came of age in the years around the crisis to have lower levels of political trust than the generations that came before and even after them, other things being equal. To explore whether this expectation holds true, this study presents an age-period-cohort analysis of the dynamics of political trust over time in some of the European countries worst hit by the recession, to address the question of whether a “recession generation” of citizens with low levels of political trust has emerged in those countries.

In more than one sense, this question is a matter of extent rather than a binary hypothesis to be supported or refuted: political trust declined more in some countries than in others over the course of the crisis and in some of them it has since (mostly) recovered but

¹ Jennings and Niemi (1981) also explored generational differences in trust in their data, but that only allowed superficial comparison of two cohorts in the United States in the 1960s and 70s.

not in others. Similarly, demarcating generations of citizens is more a matter of degree than of absolute boundaries and even though some time has now passed since the crisis, it will still be difficult to compare the “recession generation” to a younger generation, because the latter will still be quite young and less prevalent even in the latest data. Because of these matters of degree, the analysis in this study will be exploratory, rather than based on formal hypothesis testing.

The age-period-cohort (APC) analysis in this study will be based on data from the Eurobarometer (EB)² and the European Values Study/World Values Survey (EVS/WVS). These are the two richest data sources for long-term trends in political trust in Europe, and each has strengths that the other lacks: the EB is fielded at relatively equal intervals and more frequently than any other cross-national survey projects, so there are vast amounts of survey data available consistently throughout the period from 1997 (when measures of trust in national institutions were first fielded in their surveys) up to 2022 (at the time of writing). Conversely, the EVS/WVS is fielded less regularly and frequently, but it has measured people’s trust in their national parliaments since 1981 (until 2020); meaning that it covers an even longer period (which is an especially valuable feature in APC analysis).

The dependent variable in our analysis is political trust: there is a long history of literature and debates about how precisely to define and measure political trust (Easton, 1975; Hardin, 2006; PytlíkZillig and Kimbrough, 2016; Marien, 2017; Uslaner, 2018) but for our purposes here, suffice to say that I take it to refer to people’s trust in *representative* institutions (parliaments, governments and political parties) (see also Rothstein and Stolle, 2008; Schnaudt, 2019) and this has primarily (especially in cross-national survey projects) been measured by simply asking survey respondents directly how much trust (or confidence)³ they have in each institution⁴. For consistency, I use measures of trust in *parliament* here from both survey sources, as these are available over a longer period than other trust measures in these datasets⁵. Because Iceland is not consistently included in the EB, I supplement the analysis with data from the Icelandic National Election Study⁶, which has since 1983

(until 2021 at the time of writing) asked whether respondents think that “politicians are generally trustworthy or not”⁷.

The main factor of interest here is citizens’ birth *cohort* or generational membership, measured by the year in which they were born. More specifically, the intention is to disentangle the potential effects of having been socialized in a particular context (in this case, the 2008 economic crisis) during one’s formative years from the related effects of being in a particular stage of the *life cycle* (e.g., young adulthood) or a particular historical *period* (e.g. when the crisis was happening) when surveyed. Generally, disentangling cohort effects from life-cycle and period effects is one of the more infamous challenges of social science research because the three terms are closely interrelated: if we know a respondents’ birth year and age when surveyed, we know the period (year) as well and the same applies more generally; if we know two of the terms, we know the third one. This means that the terms are linearly dependent and we cannot examine the effects of any one term why holding the other two constant. More practically, this also means that in any given survey year, age and birth year are perfectly correlated and even in longitudinal datasets, they are so correlated that multicollinearity is too high for standard regression models.

This is known as the “identification problem” in age-period-cohort analysis. Many previous studies attempt to overcome this problem by imposing some restraints on the identification model, usually by constraining two coefficients to be equal (Mason et al., 1973; Yang Y. and Land, 2013) or grouping one of the variables (Grasso, 2014, 2016; Grasso et al., 2017). These restraints need to be based on theoretical assumptions about the likely effects of the three terms, although in reality, they are often undefended and risk producing arbitrary results (Tilley, 2002; Bell and Jones, 2013; Luo and Hodges, 2016). Some have suggested mechanical methods which supposedly do not require such assumptions—such as an “intrinsic estimator” (IE) (Fu, 2000, 2008; Yang et al., 2004, 2008) and hierarchical age-period-cohort models (HAPC) (Yang, 2006; Yang and Land, 2006)—but others have noted that these methods are in fact based on constraining assumptions that are obscured by the complexity of the models: those constraints are therefore less transparent and less likely to be substantively justified, even if they can have large and unpredictable consequences (Held and Riebler, 2013; Luo, 2013a,b; O’Brien, 2013; Fienberg et al., 2015). For instance, with respect to HAPC models, it has been shown that their estimates are biased in favor of period effects over cohort effects in repeated cross-sectional data (Bell and Jones, 2013, 2014, 2015, 2018; Fienberg et al., 2015; for responses, see Reither et al., 2015a,b; O’Brien, 2017).

The above methods and debates are all ultimately based on the “APC accounting model” and the “multiple classification model”, first explicated by Mason et al. (1973) and Mason and Fienberg (1985), where age, period and cohort are modeled as three independent variables with some constraints to their coefficients (Yang et al., 2008; O’Brien, 2011; Yang Y. C. and Land, 2013; see also Luo, 2013a). Recently, some prominent authors on both side of those debates have recently gravitated toward a different perspective: modeling cohort effects as cumulative, non-linear

2 I also include data from the EB’s sibling survey projects under the EB’s heading here: the Applicant Countries Eurobarometer, Candidate Countries Eurobarometer, EU Neighborhood Barometer and New Europe Barometer.

3 These two words are the same in most other major European languages and an empirical review showed no differences between English-language surveys that used one or the other (Kolczynska and Slomczynski, 2019).

4 For this analysis, I dichotomize the EVS/WVS measure so that those who chose “a great deal” or “quite a lot” of trust, as opposed to “not very much” trust or “none at all”, are coded as trusting. The Eurobarometer measure is dichotomous, where “tend to trust” is the more trusting option and “tend not to trust” is the alternative.

5 Trust in these three representative institutions is highly correlated, but there are also some indications that trust in “national government” may sometimes be capturing trust in incumbent politicians more specifically (Cook and Gronke, 2005; Kiley and Vaisey, 2020), whereas my interest here is in political trust more broadly (“diffusely”) conceived.

6 Unfortunately, the national election studies conducted in the other countries used here have not included measures of political trust in enough waves.

7 Respondents who chose “usually” or “many politicians” as opposed to “some”, “few” or “none” are coded as trusting here.

interactions between age and period effects. Luo and Hodges (2022, p. 1166) propose what they call an “age-period-cohort-interaction model”—and associated *APCI* package in R (Xu and Luo, 2022)—and explain that it “is conceptually different from previous APC methods in that it defines cohort effects as the differential effects of social change (i.e., period effects) depending on one’s age”. Similarly, Schulhofer-Wohl and Yang (2016, p. 316) present a model which “operationalizes Ryder’s concept of continuously evolving cohort effects by specifying cohort effects as accumulations of age-by-period interactions”. Finally, Weigert et al. (2022) used a type of generalized additive regression model (GAM) proposed by Clements et al. (2005) to estimate cohort effects as a cumulative non-linear interaction between age and period.

These new developments in APC analyses are certainly intriguing and promising, but it would seem that these methods are unfortunately not—as of yet—applicable to the problem at hand. Luo and Hodges’s (2022) model requires grouping the age and/or period variables to such an extent that isolating the recession generation—especially differentiating between potentially varying birth-cohort effects within the broader range of 1983–1993—is practically not feasible. Schulhofer-Wohl and Yang’s (2016) method is suitable for looking at decays in time effects by age and perhaps for plotting the evolution of individual birth cohorts’ values, but here the purpose is to disentangle non-linear cohort effects from those of age and period, systematically comparing all birth cohorts to identify any socializing effect of the 2008 recession. Finally, Weigert et al.’s (2022) method and R package—*APCtools* (Bauer and Weigert, 2023)—has some helpful visualization tools (which will be used in this study), but their method does not separate cohort effects from age and period effects; instead it graphs estimates by birth cohort which also reflect the effects of their different ages and the periods in which they have been surveyed⁸.

Thus, I adopt the more traditional method that has been dominant in prior APC analyses within the field of political science (Grasso, 2014, 2016; Grasso et al., 2017): smoothing the effects of birth year on the dependent variable (in this case, political trust) when controlling for categorical variables for each individual survey year and a collapsed version of the age variable (without any interaction). This model overcomes the identification problem by constraining the estimates of the age variable by collapsing it into predefined age groups, which in effect assumes that the effects of age within each age group is the same (Luo and Hodges, 2016). As mentioned above, this is a fairly strong assumption and constraints

should always be justified. In this case, there is not much prior literature on the specific effects of age on political trust, but in the political context, it is generally accepted that age effects are most likely to be distinct for those in their youth, young adulthood and older age (Henn et al., 2005; Blais and Rubenson, 2013; Smets, 2016; Kitanova, 2019; Sturgis and Jennings, 2020). Youth is usually operationalized as those younger than 25 years old (e.g., Henn et al., 2005; Kitanova, 2019) but Smets (2016) has highlighted that at least until the age of 35, we might expect an effect of being in young adulthood. For that reason, I collapse the age variable into the following five categories: (a) youth (younger than 25), (b) young adults (25–34 years old) (c) adults (age 35–64), and (d) older adults (65 years old and older).

The main independent “variable” of interest in this study is whether citizens experienced their formative years in the 2008 economic crisis (which of course continued for a while after that year, to different extents between countries). What counts as “formative years” is not an exact science but they are generally conceived as covering late adolescence and early adulthood, usually about a 10 year period roughly between 15 and 25 years of age (Bartels and Jackman, 2014). Thus, we will be looking to see whether citizens born roughly between 1983 and 1993 appear to exhibit lower levels of trust than citizens born before or after that point, beyond the period effects of the recession and life-cycle effects of youth on political trust. I limit the analysis to respondents born between 1920 and 2000, as there are very few respondents born before or after those years, resulting in highly unreliable (and extreme) estimates for those years. Because our interest here is in generational differences per se, I do not include any other “control” variables: any other variables would be mediators of the effects that I am testing for here, not confounders (for example, a person’s level of education cannot determine their year of birth).

The focus here is on a potential “recession generation” of citizens in European countries which were severely affected by the crisis. Of course, all countries were affected to some extent, but several stand out as the most dramatically affected: Greece, Ireland, Iceland, Italy, Portugal and Spain all experienced swift and (near-)system-wide economic collapse followed by political upheaval. I do not claim that this is necessarily an exhaustive list of the six most severely affected (European) countries by all conceivable measures or some combination of, e.g., declining GDP (growth) per capita, rising unemployment, political turmoil and declining political trust. Trying to determine what countries were in some sense objectively worst hit by the crisis by those different measures can (and did) cause a prolonged headache. However, these are the six countries that most consistently appear when examining those different measures as well as the academic literature and media coverage about the effects of the recession (Stewart et al., 2010; Karanikolos et al., 2013; The New York Times, 2016; Ómarsdóttir and Valgarðsson, 2020; Önnudóttir et al., 2021). A more comprehensive analysis might be able to systematically compare cohort effects between countries more and less affected by the crisis (although this would be complicated by the non-linear and non-binary nature of the research question), but this is outside the scope of the current study, which is primarily an exploratory case study of cohort dynamics in these particular countries.

⁸ In the interest of full transparency: I initially intended to use the *APCtools* method for the central analysis in this study, and also looked into the other two methods in some detail. After critical points from two reviewers, extensive email correspondence with the creators of the two R packages, and a deep dive into the source code and methods, I concluded that they were not applicable to my purposes, for the reasons given here. I tried producing the desired interaction estimates myself but alternative methods that should produce substantively very similar results (e.g., using GAMs or GLMs, extracting interaction estimates or predictions) produced wildly different results with very high uncertainty estimates. It would thus seem that interaction estimates that are granular enough for the purposes of this study (interacting each individual age year with each individual survey year) are too unstable and collinear to use here.

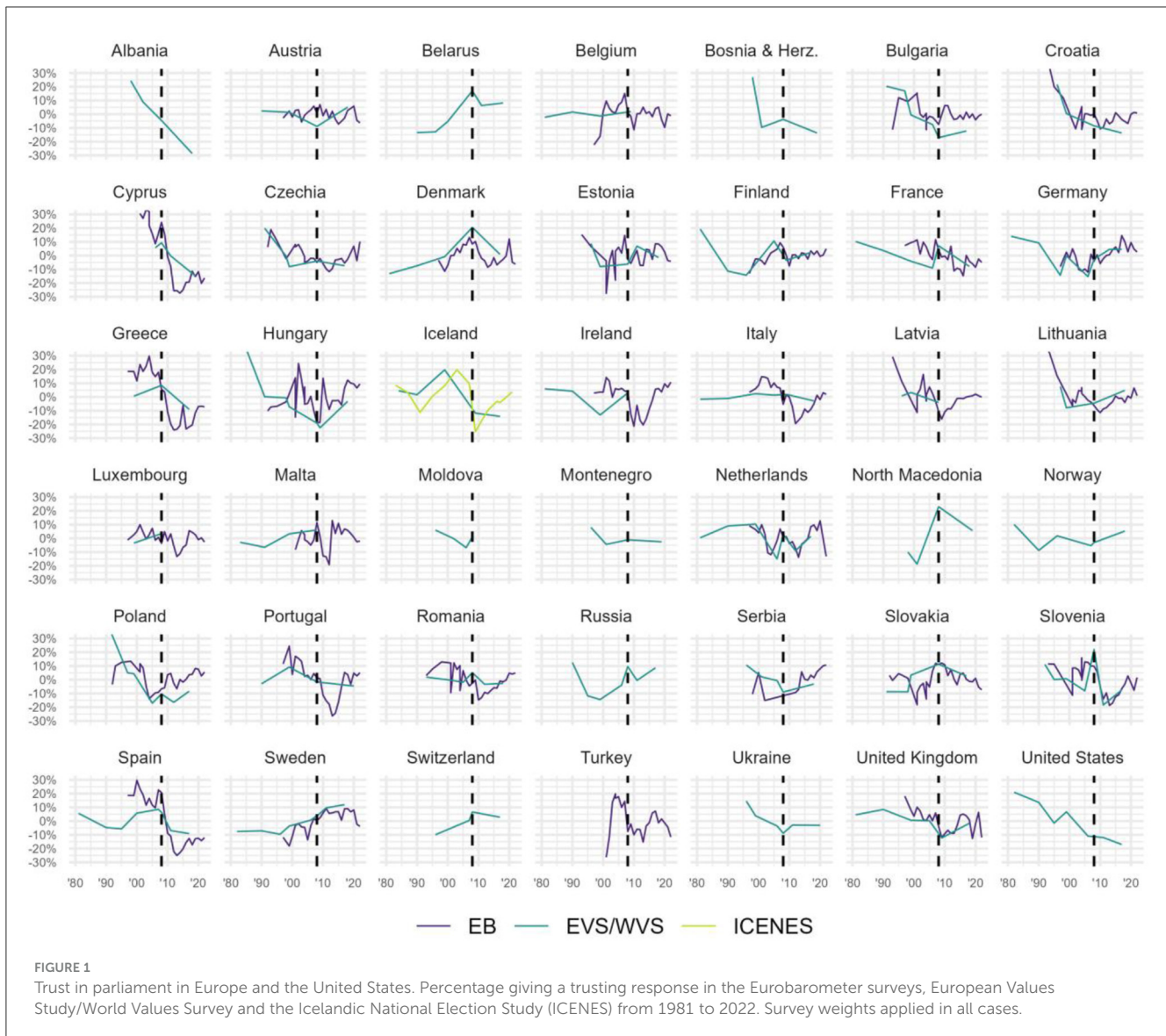


Figure 1 presents trends in trust in parliament⁹ from the survey sources used here in all European countries consistently included in these datasets, as well as the United States for comparison. This presents the percentage of respondents choosing the more trusting option(s) in each year minus their average percentage within each country in the whole period, to be able to more directly compare the size of any trust decline in 2008 between countries with different levels of trust. This shows that indeed, these six countries show six of the sharpest declines of trust during and following the crisis, especially when looking at the more fine-grained EB data¹⁰. A few other countries do show declines around that time, but very few if any are as steep as in Greece, Iceland, Ireland, Italy, Portugal and

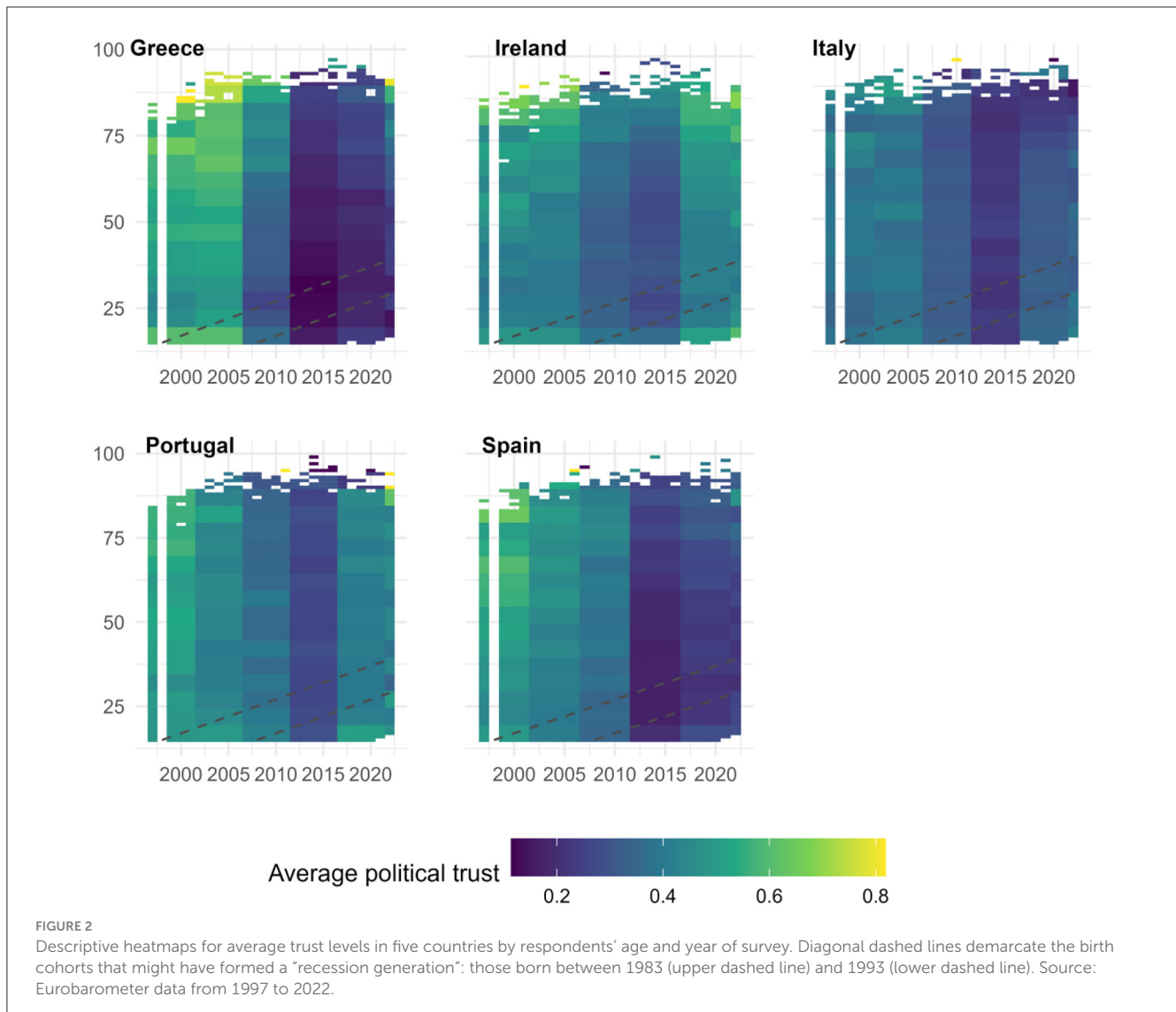
Spain. In Albania and the United States, there are clear declines in trust but these are more steady in the whole period, rather than an apparent result of the shock of the crisis in 2008. Finally, Cyprus does also show a very steep decline in trust after the crisis, but we only have data since 2004 fielded there, meaning that it would not be feasible to meaningfully disentangle age, period and cohort effects there. Thus, the analysis in this study will focus on the six countries identified: starting with descriptive exploration before moving on to statistical analysis using GAMs.

Results

Starting with some descriptive results, Figure 2 presents heatmaps using the *APCtools* R package (Weigert et al., 2022; Bauer and Weigert, 2023). These present the average trust levels of citizens in five of our countries by the respondent's year of age (on the y-axis) and the year when the survey was fielded (on the x-axis), based

9 In the case of ICENES in Iceland, the measure is for trust in politicians.

10 Note that Iceland was not surveyed between 1999 and 2009 in the EVS/WVS, which means the apparent earlier timing of the decline in trust there is just a result of connecting those two data-points.



on data from the Eurobarometer¹¹. The diagonal dashed lines in the graph indicate our birth cohorts of interest: those born in 1983 (upper dashed line) and 1993 (lower dashed line). To attempt to “eyeball” any potential cohort effects, we can follow those cohorts—and the ones between them (in the area demarcated by the two dashed lines)—along the diagonal and try to see whether they appear to be both less trusting than older respondents in the same year(s) and less trusting than respondents of the same age in earlier years. The heatmap is coded so that darker blue shades indicate more trust and brighter green shades indicate less trust.

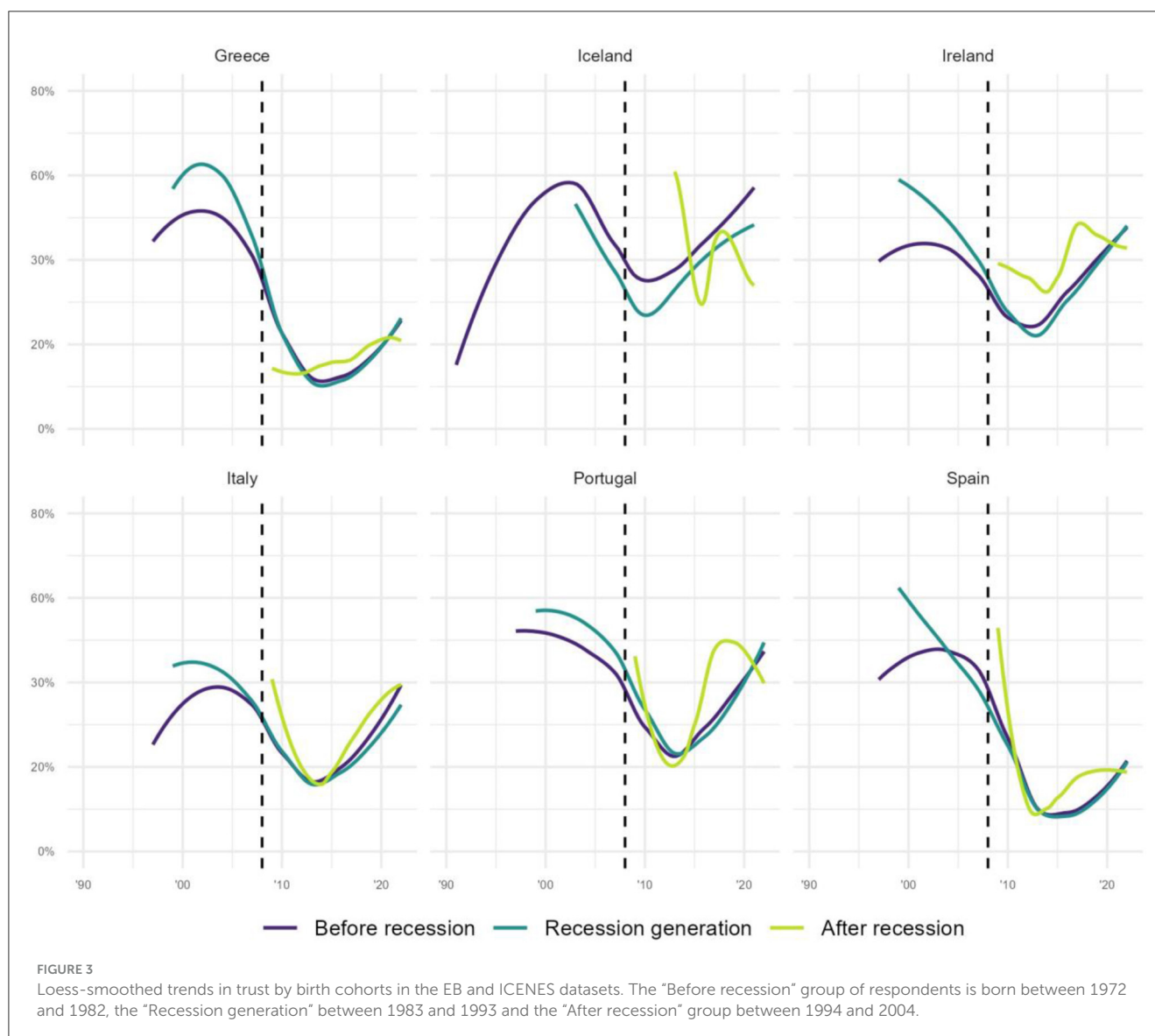
Admittedly, it is difficult to confidently eyeball whether a cohort's trajectory over time (and the life cycle) is significantly different from those that came before it, but it is still instructive to examine these before we turn to the more sophisticated GAMs. Most clearly in Greece and Spain, the least trusting respondents do indeed appear to be our young “recession generation” following the

2008 crisis, and they appear to still be less trusting than respondents of most other ages (including younger respondents) throughout the following period (which runs until 2022). In Ireland, that cohort also appears least trusting following the crisis, although its trust levels recover after that, but it looks like it doesn't recover as much as for most other cohorts. In Italy and Portugal, it is harder to discern such a generational pattern because the crisis appears to have hit trust levels of all ages relatively equally and in Italy the older cohorts have not recovered much, although it looks like the recession generation are still some of the least trusting citizens in Portugal into 2022.

Attempting to simplify the above information, [Figure 3](#) uses data from the EB and ICENES to compare the trust levels of three birth cohorts over time¹²: our “Recession generation” born between 1983 and 1993, an older generation of respondents born between

¹¹ The more sporadically fielded data from the EVS/WVS and ICENES is less suitable for this type of visualization but is presented in the [Appendix](#) and the results are broadly similar.

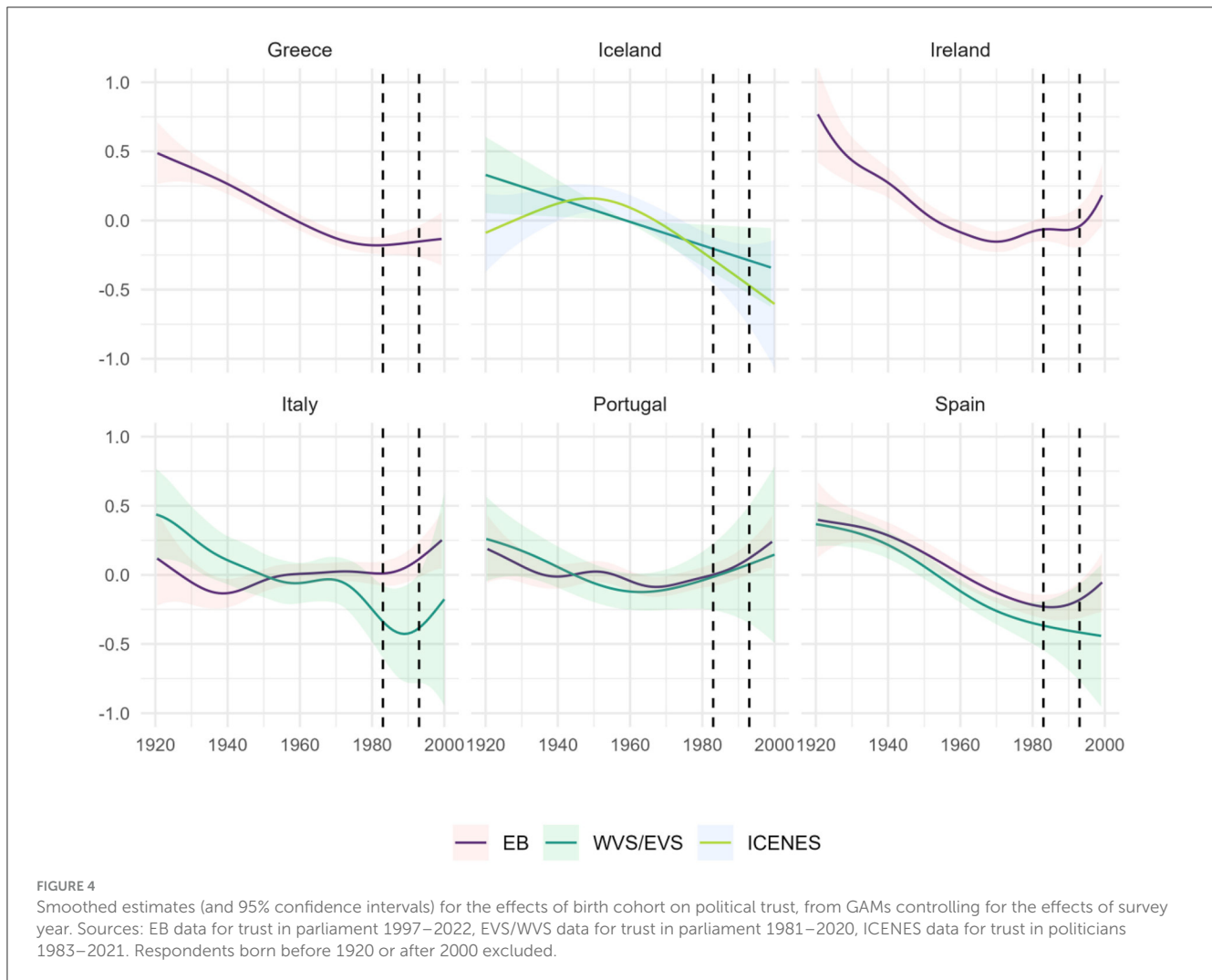
¹² These trends are loess-smoothed due to a lot of fluctuation in some of the series, particularly for the youngest cohort which is based on the fewest number of observations; about 8% in the EB data and about 12% in the ICENES data.



1972 and 1982 (“Before recession”) and a younger generation born between 1994 and 2004 (“After recession”). We exclude all respondents before 1973 and after 2003 in this graph to maximize comparability, comparing three cohorts that span 11 birth-years each, but we are still limited by the nature of descriptive APC-analysis: the age of respondents is likely to confound our observed trends, because the average age of the oldest of these generations in our data is 28.7 years, for the “recession generation” it is 23.8 years but for the youngest generation it is only 19.7. Nevertheless, [Figure 3](#) provides important indications before delving into our main analysis: with the exception of Iceland and perhaps Italy, there is an overall tendency for the youngest of these generations to have higher levels of trust than the older two in our data (these results fluctuate more since this cohort includes the fewest respondents, meaning that there are few observations behind some points in the graph). The pattern is less clear for the recession generation: in Iceland, they appear to be less trusting than both their older and younger counterparts, but in the other countries the differences

between them and the oldest generation are non-existent or minimal in each year, although where there are differences, the recession generation are generally slightly less trusting.

To account for the potential confounding of life-cycle and period effects on these comparisons, we turn next to the GAMs estimating the smoothed effects of birth year on political trust, when controlling first for the effects of period (with year as a categorical variable, to account for non-linear effects and the period effects of the 2008 crisis in particular) and then for the grouped age variable. As discussed in the previous section, grouping the age variable constrains the estimates of the models to overcome the identification problem: here, it is grouped into four age groups representing youth, young adulthood, adulthood and older adulthood. [Figure 4](#) presents the smoothed fit estimates for the effects of birth year on trust when only controlling for the (categorical) effects of survey year, derived from models conducted separately on each combination of data source and country. [Figure 5](#) presents the same estimates from the model including



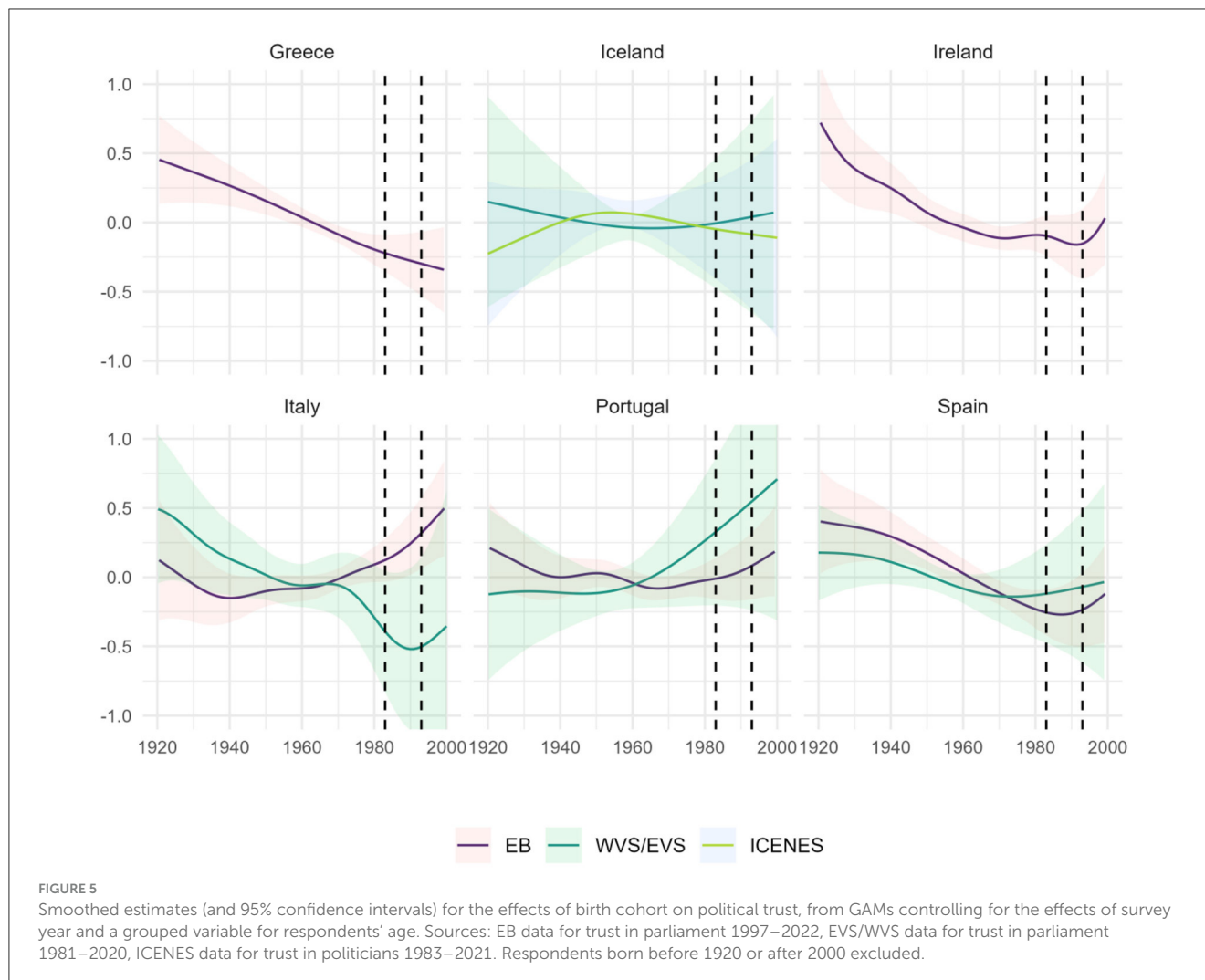
the grouped age variable. In both figures, dashed lines indicate respondents born in 1983 and 1993, demarcating roughly the cohorts which experienced most of their formative years during and after the 2008 crisis.

The results of these models are inconclusive overall. The estimates from GAMs only controlling for survey year (in Figure 4) suggest a “recession generation” effect only in Italy in the WVS/EVS data, but the Eurobarometer data actually suggests the reverse pattern there, and there is no such effect apparent in the other countries. The results from GAMs adding controls for respondents’ age groups (Figure 5) do suggest a slight dip in the Eurobarometer data for Ireland and Spain: although in both cases it is difficult to see whether these are a sort of continuation of earlier trends, there does seem to be a bit of a juncture in our period of interest and respondents of those birth cohorts have lower levels of trust than all older *and* younger birth cohorts. Greece shows a curiously linear decline of trust by successive birth cohorts, the data for Iceland show non-linear patterns in opposite u-shaped curves, and the data in Portugal suggests a possible *rise* in trust among the youngest cohorts, although those estimates come with wide confidence intervals and are thus very uncertain. Overall, the 95% confidence intervals (the shaded areas) indicate that there is a lot

of uncertainty in some of these estimates: especially in all of the data from Iceland and in data for the younger birth cohorts in Italy, Portugal and Spain.

Discussion

The 2008 financial crisis was a cataclysmic global event that uprooted the economic, social and political life of many countries and sent political trust plummeting across Europe (Armingeon and Guthmann, 2014; Foster and Frieden, 2017; Devine, 2021). In some of the countries worst affected, there are indications that it may also have socialized a “recession generation” of citizens, who were in their formative years when it happened, into lower levels of political trust that persisted beyond the contemporary effects of the crisis. Comparing descriptive averages by birth cohorts seems to suggest this conclusion in Greece, Ireland, Spain and perhaps Portugal – but results from more sophisticated generalized additive models (GAMs), controlling for period effects and grouped (constrained) age effects, are inconclusive: these suggest that there is a slight recession generation effect in Ireland, Spain and perhaps Italy, but other countries do not show that pattern and the results differ



between data sources (the Eurobarometer on one hand and the WVS/EVS on the other).

Thus, the findings of this study indicate that there may be a recession generation effect in some of these countries, but it is too early to conclude confidently one way or the other. Disentangling any independent effects of age (the life-cycle), period (the time at which something is measured) and cohort (the generational membership of individuals) is notoriously difficult and there is a long-running history of debates and innovation in age-period-cohort (APC) analysis, proposing different statistical solutions that often do not end up producing consistent and reliable results and do not really solve the identification problem (Bell and Jones, 2013; Held and Riebler, 2013; Luo, 2013a; O'Brien, 2013; Fienberg et al., 2015; Schulhofer-Wohl and Yang, 2016). While I have here employed the common approach within political science of constraining the age variable into age groups (Grasso, 2014, 2016; Grasso et al., 2017) and attempted to base this classification on prior literature of the role of life-cycle changes in political outcomes (Henn et al., 2005; Blais and Rubenson, 2013; Smets, 2016; Kitanova, 2019; Sturgis and Jennings, 2020), it is still quite possible that this constraint disposes of important age difference within these groups and results in unreliable estimates. The wide

confidence intervals in many of the estimates most important to our exploration (i.e., for the youngest birth cohorts) also means we should be careful in interpreting them.

This study has been largely exploratory and the conclusions are tentative: we will likely need to wait a long time before the relentless and punishing march of time ages the youngest cohorts alive today and introduces even younger cohorts into the electorate, so that we can more reliably disentangle the period effects of the—still relatively recent—2008 crisis from any socialization effects that it may have had on the generation coming of age at the time. In addition, experts in APC analysis have only recently started to develop models for approaching cohort effects as a *cumulative interaction between age and period effects* (Schulhofer-Wohl and Yang, 2016; Luo and Hodges, 2022; Weigert et al., 2022; Xu and Luo, 2022): unfortunately, these methods are currently not suitable to answering the particular research question explored here, but future developments in this alternative approach may well enable us to provide more conclusive results.

To the extent that we are confident in the descriptive differences between cohorts presented here, and the few cohort effects apparent in the results from the GAMs, those do suggest that there may be a “recession generation” of citizens in at least some of these

countries. This would have important theoretical implications for our understanding of the formation of political trust judgements, the role of political events in socializing these judgements and the role of generational differences in driving aggregate changes in trust. There is a long history of debates within political science about the extent to which attitudes such as trust are based on people constantly updating rational evaluations of their environment (Achen, 1992; Page and Shapiro, 1992) or are instead more or less stable throughout their lives, shaped more by factors such as their personality (Cawvey et al., 2017), parental influence (Jennings et al., 2009) and other agents of socialization in their formative years (Hyman, 1959; Kiley and Vaisey, 2020). Recent studies have suggested that individuals' trust judgements are largely stable over a long period of time, but most prone to change in early adulthood and responding to political events in the short-term (Kiley and Vaisey, 2020; Devine and Valgarðsson, 2023). The results reported here may speak to that literature, as it provides some indications that citizens who experienced their formative years during the 2008 crisis may have carried lower levels of trust into adulthood, beyond the period effects of the crisis. That would support the notion that citizens' political attitudes are most responsive to contexts in their formative years, with more attitudinal stability in adulthood.

One might feel that the inconclusive findings presented here are disappointing to advocates of socialization explanations of attitude formations, considering that it was intended as a "most likely" test of the socializing effects of political events: the effects of a major economic crisis in the countries most dramatically hit by it. I share that feeling, but it is also worth considering that this is only one out of a multitude of important political events that the people of each country experience, most of them presumably domestic in nature and thus unique to each country. In addition, the analysis here looked at all citizens regardless of their social or economic standing: the potential dynamics uncovered here are likely to conceal more dramatic effects among some social groups (especially the less well off), and less dramatic effects among some. The tapestry of political trust drivers is unlikely to consist only of a single event or to be the same for all citizens of the same birth cohort in each country.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found here: <https://www.gesis.org/en/eurobarometer-data-service/home>; <https://www.worldvaluessurvey.org/WVSEVStrend.jsp>; <https://dataverse.rhi.hi.is/dataverse/ICENES>.

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Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpos.2024.1245666/full#supplementary-material>

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