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The European Trust Crisis and the Rise of Populism

ABSTRACT We study the implications of the Great Recession for voting for antiestablishment parties, as well as for general trust and political attitudes, using regional data across Europe. We find a strong relationship between increases in unemployment and voting for nonmainstream parties, especially populist ones. Moreover, unemployment increases in tandem with declining trust toward national and European political institutions, though we find only weak or no effects of unemployment on interpersonal trust. The correlation between unemployment and attitudes toward immigrants is muted, especially for their cultural impact. To explore causality, we extract the component of increases in unemployment explained by the precrisis structure of the economy, in particular the share of construction in regional value added, which is strongly related both to the buildup preceding and the bursting of the crisis. Our results imply that crisis-driven economic insecurity is a substantial determinant of populism and political distrust.

A specter is haunting Europe and the West—the specter of populism. Recent populist events include the United Kingdom's vote to exit the European Union, the election of Donald Trump as U.S. president, and the

Conflict of Interest Disclosure: Yann Algan received financial support for this work from the European Commission's Horizon 2020 program under European Research Council Consolidator Grant no. 647870. With the exception of the aforementioned, the authors did not receive financial support from any firm or person for this paper or from any firm or person with a financial or political interest in this paper. They are currently not officers, directors, or board members of any organization with an interest in this paper. No outside party had the right to review this paper before publication. The analysis and conclusions set forth are those of the authors and do not indicate concurrence by the European Bank for Reconstruction and Development.

strong showings of Marine Le Pen in the French presidential elections and the Alternative for Germany (AfD) party in the German elections. In the European continent, populist politicians had their first significant successes even earlier—with parties like the Freedom Party in Austria, AfD in Germany, Golden Dawn in Greece, Jobbik in Hungary, the Five Star movement in Italy, Law and Justice in Poland, the Swedish Democrats, and the U.K. Independence Party gaining substantial ground since 2012. In France, Le Pen's National Front rose to prominence in the 2014 European elections and in the first round of the 2015 regional elections.

The rise of populism in the European Union's member countries is important for many reasons. The EU is a historically unprecedented supranational unification project (Spolaore 2013). It has been successful in preserving peace and in integrating the "periphery" countries of Southern and Eastern Europe into the European democratic model (Gill and Raiser 2012). However, the economic crisis has uncovered shortcomings in the design of European economic and political institutions. As we demonstrate in this paper, Europeans appear dissatisfied with local and EU politicians and institutions. And this distrust fuels—and in turn is reinforced by—the rise of political extremism.

There are two potential explanations for the decline of trust toward the EU, the rise of Eurosceptic populists, and the electoral successes of radical-left and far-right parties. The first one is a cultural backlash against progressive values, such as cosmopolitanism and multiculturalism, and a shift toward national identity. The second explanation emphasizes economic insecurity, stemming from either globalization and technological progress (typified by outsourcing, increased competition from low-wage countries, and automation) or the sharp increase in unemployment in Europe in the aftermath of the recent global financial and economic crisis. Although these two explanations are not mutually exclusive and certainly interact, much of the public debate has been about the cultural backlash. This paper explores the economic roots of populism, focusing on the impact of the Great Recession.

The recent crisis has had a major impact on the European economy. The EU-wide unemployment rate increased from 7 percent in 2007 to 11 percent in 2013. Unemployment dynamics have been uneven. After a short-lived spike in 2008–09, unemployment in Germany fell to pre-crisis levels; in Greece and Spain, it climbed above 20 percent. There has been substantial heterogeneity in unemployment dynamics *within* the EU periphery and core (often associated with Germany and its neighboring

economies), and even within countries. For example, in 2016 the national unemployment rate in the United Kingdom was 5 percent—lower than in 2007. However, in the *median* NUTS 2 region, the unemployment rate was 2 percentage points higher than before the crisis.[1] In Northern Greece, unemployment in 2012–14 hovered around 30 percent, while in the Aegean Sea and Ionian Sea islands, it fluctuated between 15 and 21 percent, as tourism mitigated the shock of the crisis. Likewise, unemployment in Italy in 2012–15 ranged from 6 to 7 percent in the North (Trento, Veneto, and Friuli-Venezia Giulia) to above 20 percent in the South (Campania, Calabria, and Puglia).

We show that the differential impact of the crisis explains the rise of antiestablishment, often populist, parties, and also the respective drop in trust toward political parties and the European Union. Globalization in general and the EU in particular have been successful in promoting growth but have not done as well in sharing the gains. Large parts of society have felt left behind and have risen against the establishment, national, and European institutions. The recent vintage of populism unites far-right and radical-left politicians in their criticism of the continent's elites and of the cross-border integration that these elites represent. In some cases, the rise in unemployment fuels support for far-left parties, such as Podemos in Spain; in other cases, it encourages far-right nationalistic and xenophobic parties, as in Hungary and the Netherlands. Sometimes, rising unemployment fuels support for both radical-left and ultraright nationalistic parties that increasingly coordinate, for example, the coalition between Syriza and the Independent Greeks.

We first conduct a descriptive analysis of the evolution of unemployment, voting, and trust beliefs across Europe before and after the crisis, showing that the economic crisis has unfolded in tandem with a political trust crisis and the rise of populist, antiestablishment voting.

Second, we study the relationship between unemployment and voting for antiestablishment (radical-left, far-right, populist, and Eurosceptic) parties

1. NUTS stands for *nomenclature des unités territoriales statistiques*, or nomenclature of territorial units for statistics. The NUTS classification system is a geocode standard for referencing subdivisions of countries for statistical purposes. The standard is developed and regulated by the European Union, and thus covers the member states of the EU in detail. For each EU member country, a hierarchy of three NUTS levels is established by Eurostat in agreement with each member country; the subdivisions in some levels do not necessarily correspond to administrative divisions within the country. The EU regulation establishing the NUTS system (Regulation [EC] No. 1059/2003) designates average population sizes for the three NUTS levels as follows: NUTS 1, between 3 million and 7 million; NUTS 2, between 800,000 and 3 million; NUTS 3, between 150,000 and 800,000.

at the subnational level. We compare the regions that greatly suffered from the crisis with those that weathered the crisis relatively well—controlling for pan-European and country group–specific time trends. We document that rising voting shares for antiestablishment, especially populist, parties follow increases in unemployment. It is the change in unemployment—rather than its level—that correlates with voting for nonmainstream parties; this novel—to the best of our knowledge—result echoes the findings of the literature on the role of economic losses in self-reported well-being and happiness (Layard 2005).

Our methodology accounts for time-invariant regional factors and unobserved country group dynamics; however, the estimates may pick up some regional, time-varying variables that are unobserved or hard to account for. We thus develop a two-stage least squares (2SLS) approach that extracts the component of unemployment explained by the precrisis specialization of the regional economy, and in particular the share of construction. Because construction and real estate played a major role both during the buildup preceding and the bursting of the crisis around the world, we use the precrisis share of construction (real estate and housing) as an instrument for regional unemployment. The 2SLS estimates show the considerable causal effects of the rise of unemployment (explained by the precrisis structure of the regional economy) on voting for nonmainstream parties: A 1 percentage point increase in the unemployment rate is associated with an increase in voting for the antiestablishment parties of 2 to 4 percentage points. Although precrisis specialization is not fully exogenous, we show that the nexus between the construction share, unemployment, and voting does not seem to reflect other time-varying regional features, such as immigration or education.

We then use the vote of the citizens of the United Kingdom in the June 2016 referendum to stay in or leave the European Union (known as Brexit) as an "out-of-sample" test of the Europe-wide results. The analysis shows that *increases* in unemployment during the crisis period 2007–15 (rather than the *level* of unemployment in 2015) are strong predictors of the Brexit vote. We find similar results in 2SLS specifications that use the precrisis share of construction across the United Kingdom's 379 electoral districts to instrument for the subsequent spike in regional unemployment.

Third, we examine the impact of the recession on political and general trust and on beliefs about the role of immigrants, using individual-level data from the European Social Survey. There is a statistically and economically significant relationship between regional unemployment and a decline in trust toward the European Parliament and national parliaments. The relationship between regional unemployment and interpersonal trust is weaker,

and is not always significant. Increases in unemployment correlate significantly with distrust toward the courts, but not with trust toward the police. The 2SLS estimates are similar; the component of the rise in unemployment due to the precrisis share of construction is a significant correlate of distrust toward European and national institutions.

Fourth, we exploit the individual-level nature of the data to explain the underlying forces of votes for antiestablishment parties. The results hold for both men and women, and for both younger and older cohorts. The estimates are somewhat stronger and more precise for older cohorts, in line with anecdotal evidence on their antiestablishment voting. The relationship between unemployment and distrust toward political institutions is stronger for non–college graduates, a result in line with the findings of other researchers—including David Autor, David Dorn, and Gordon Hanson (2016); Autor and others (2017); Yi Che and others (2016); and Italo Colantone and Piero Stanig (2016)—who relate populist voting and political polarization to depressed wages among unskilled workers, fueled by rising competition from low- and middle-income countries.

I. Related Literature

Our paper is related to several strands of the literature—first and foremost, to the research on the political economy of populism that studies the origins and implications of populist parties and policies.[2] Rudiger Dornbusch and Sebastian Edwards (1991) discuss the macroeconomics of populism in Latin America, whereas Dani Rodrik (2017) provides a generic discussion of the recent rise of populist parties and interprets it in the light of economic theory. Recent theoretical research on the political economy of populism includes the work of Daron Acemoglu, Georgy Egorov, and Konstantin Sonin (2013); Sharun Mukand and Rodrik (2017); Luigi Guiso and others (2017); and Rafael Di Tella and Julio Rotemberg (2016).

A number of recent empirical papers study populism's correlates or origins in specific contexts. Sascha Becker, Thiemo Fetzer, and Dennis Novy (2017) examine the main correlates of the Brexit vote across U.K. districts, looking at dozens of socioeconomic indicators; they find that significant correlates include low levels of education and low income, historical reliance on manufacturing, and to a lesser extent unemployment, though there is no strong relationship with the levels of immigration. Colantone and Stanig (2016) show that globalization in general—and import competition

2. For reviews, see Gidron and Bonikowski (2013) and Mudde and Rovira Kaltwasser (2017). For a general introduction, see Taggart (2000).

from China in particular—is a strong correlate of the Brexit vote. This is in line with the findings of Autor and others (2016, 2017) and Che and others (2016), who show rising political polarization and a higher likelihood of pro-Trump voting in U.S. counties that were affected the most by China's accession to the World Trade Organization.[3] Colantone and Stanig (2017) uncover a similar link between import competition and support for nationalistic, right-wing parties across EU regions. Similarly, Christian Dippel, Robert Gold, and Stephan Heblich (2016) reveal a link between import competition from China and voting for far-right parties in Germany over the period 1997–2009.

Using opinion surveys from many European countries, Catherine De Vries and Isabell Hoffmann (2016) provide additional evidence that the fear of globalization is a decisive factor behind the demands for changes away from the political mainstream. Although this fast-growing strand of the literature focuses on the medium-term origins of political populism or extremism (mostly related to trade and immigration),[4] we examine the impact of the deep economic crisis that hit Europe during the period 2008–09 (and also the United States and other industrial countries) and the subsequent crisis on the European periphery (mostly over the years 2009–13).

We show that large economic downturns fuel political polarization.[5] In this regard, our work relates to empirical studies quantifying recovery after severe (typically short-term) economic downturns, and banking, currency, and balance of payment crises. Recent papers by Kenneth Rogoff (2016) and Antonio Fatás and Lawrence Summers (2016) connect sluggish

3. Jensen, Quinn, and Weymouth (2017) also document a correlation between import competition from China and Mexico and employment in low-skill services with voting against the incumbent.

4. Recent works examining the impact of immigration on voting for antiestablishment or nationalistic parties include those by Hatton (2016); Becker and Fetzer (2017); Mayda, Peri, and Steingress (2016); and Barone and others (2016). Dinas and others (2016) study the link between refugee flows and voting for far-right parties in Greece. Dehdari (2017) connects economic distress and immigration to voting for far-right parties in Sweden.

5. Stock (1984) presents cross-county regression evidence that the rising indebtedness of American farmers in the late 19th and early 20th centuries was related to political unrest and voting for populist candidates. De Bromhead, Eichengreen, and O'Rourke (2013) connect voting with the severity of economic contraction in the interwar period (1919–39). Studying 171 elections in 28 countries, they find that the depth and duration of the crisis are related to the rise of far-right parties. Tabellini (2017) shows that the influx of immigrants in the United States in the interwar period fueled the success of conservative politicians and support for anti-immigrant legislation, although rising immigration increased locals' wages and employment. In parallel work, Matakos and Xefteris (2017) present cross-country evidence that though mild recessions foster support for mainstream parties, large economic downturns fuel antiestablishment voting.

recoveries to precrisis trends. Our main finding—that the sharp increase in political extremism and the associated drop of trust toward political institutions are correlated with the severity of the economic downturn—offers a plausible mechanism explaining the long-lasting consequences of economic crises. Our results thus complement the findings of Manuel Funke, Moritz Schularick, and Christoph Trebesch (2016), who, studying 20 advanced economies over the years 1870–2014, document with panel regressions that financial crises increase political polarization, raise fragmentation in the parliament, and spur political unrest (see also Matakos and Xefteris 2017).

The closest papers to ours are the parallel studies by Guiso and others (2017), Ronald Inglehart and Pippa Norris (2016), and Christian Dustmann and others (2017).[6] Guiso and others (2017) study the demand for and supply of populism, both empirically and theoretically. They document a link between individual-level economic insecurity and distrust toward political parties, voting for populist parties, and low electoral participation. They also show that parties shift their agendas to cater to voters' preferences in response to economic insecurity (an interesting aspect that we do not address). Inglehart and Norris (2016) also use individual-level survey data and argue that the rise of populism reflects cultural rather than economic factors.

Unlike these two studies, we use actual region-level voting data rather than self-reported information from surveys (which have much smaller regional coverage and may be subject to reporting biases). We focus on the impact of crises, in particular the sizable rise in regional unemployment after the 2008–09 financial crisis. We develop an instrumental variables approach to identify causal effects, and we associate regional industrial specialization, especially the precrisis boom in construction, with the rise in antiestablishment voting in the aftermath of the crisis. Although our instrumental variables strategy does not fully exploit random, exogenous variation, the reduced-form link between construction and voting is an interesting result by itself, because it connects the precrisis boom with current developments. In contrast to Inglehart and Norris (2016), we find that economic insecurity explains a substantial share of the rise in populism when controlling for time-invariant factors.[7]

6. Hernández and Kriesi (2016) report cross-country evidence of a link between the severity of the Great Depression and the electoral losses of incumbent parties.

7. Our results are consistent with De Vries (forthcoming) that the rise of populism mirrors a shift from a left/right to a cosmopolitan/parochial divide; regions with a larger increase in unemployment are more likely to have a negative attitude toward immigrants, mostly because of their impact on the economy and not because of their alien cultural identity (see also Hobolt and De Vries 2016).

We diverge from Inglehart and Norris (2016) in two main ways. First, we look at the effect of the within-region variation of unemployment on institutional trust and populism, accounting for time-invariant factors and looking at actual votes. Our analysis shows that voting for nonmainstream parties (and Brexit) and political distrust stem from *increases* in unemployment during the crisis, rather than the *level* of unemployment. Second, we take a different perspective on what we consider to be cultural values and attitudes. Although Inglehart and Norris (2016) explain populism by the (presumably exogenous) rise of institutional distrust, we show that the increase in distrust itself stems directly from the crisis. We show that, because economic insecurity increases populist voting and spurs distrust toward political institutions and dissatisfaction with democracy, the changes in the latter variables cannot be considered independent drivers of the former.[8]

Our result suggests that the cultural backlash and economic insecurity explanations are connected. Economic insecurity has a direct impact on values and beliefs. However, these values might also in turn amplify or mediate the effects of economic shocks. In particular, we find that the older generations are experiencing a larger decline in trust than the younger generations, although the latter have suffered more from the rise in unemployment during the crisis. One plausible explanation is that the older generations have more conservative or traditional values and are more sensitive to changes in the economic environment. Thus, our contribution to the debate about the cultural hypothesis is mainly to bring in other aspects, in particular economic factors, to explain the rising support for populism.

In concurrent research, Dustmann and others (2017) also use the European Social Survey and uncover the fact that unemployment (and GDP) shocks at the regional level are accompanied by a trust deficit (defined as the ratio of political to general trust). Dustmann and others (2017) further show that regional unemployment correlates with nonmainstream voting in European Parliament elections. These results complement our findings from national parliamentary and presidential elections, which are more important, given that the European Parliament has rather limited authority. Moreover, our sample is noticeably larger (for voting outcomes, we have 226 regions, versus Dustmann and others' 132). We also uncover a link

8. The caveat holds for most of the variables considered as independent by Inglehart and Norris (2016), such as attitudes toward immigration, demand for authority, and political orientation. Unemployment affects these beliefs directly.

between precrisis construction share, rise in unemployment, and postcrisis voting, which suggests that the precrisis boom plays a role to the recent spike of populism.

Our paper also contributes to the large body of research linking trust (as well as civic-mindedness, social capital, and beliefs) with economic performance.[9] Although there has been extensive research on the implications of trust and social or civic capital for various aspects of economic performance (Tabellini 2010; Algan and Cahuc 2010), the literature on their origins is relatively limited. Building on Robert Putnam's (1993) influential work, empirical papers study the long-run impact of important historical episodes—for example, the culture of city-states in medieval Italy (Guiso, Sapienza, and Zingales 2016a), the role of Africa's slave trade (Nunn and Wantchekon 2011), and the role of communism and the secret police in East Germany (Jacob and Tyrell 2010). Our paper contributes to this research in several ways. To start with, instead of looking at long-run determinants, we study the impact of the 2008–09 financial and economic crisis. In this sense, our work is conceptually close to that of Maxim Ananyev and Sergei Guriev (2015), who provide evidence linking the severity of the 2009 crisis in Russia with general trust levels. Although the literature has focused on interpersonal trust, we look at trust toward political institutions—including the courts, the police, political parties, and the European Union—which has been a largely unexplored dimension. We show that trust toward institutions is much more volatile and is influenced more by short-term fluctuations than interpersonal trust.

Our analysis of the role of business cycles in institutional trust echoes that of Betsey Stevenson and Justin Wolfers (2011), who study the relationship between the 2008–09 crisis and trust toward the financial system across U.S. states. The link between unemployment and political or institutional distrust is also related to research on the interactions between cultural norms or beliefs and institutions (Alesina and Giuliano 2015). We document that institutional trust is the critical element for understanding political preferences and voting behavior.

Our paper also contributes to research on the political economy of the European Union. Until recently, policymakers and economists have focused on economic convergence—discussing the issues of debt, deficits, and inflation. However, the European crisis has shifted attention to

9. For detailed surveys of the theoretical and empirical literature, see Algan and Cahuc (2014); Guiso, Sapienza, and Zingales (2011); Durlauf and Fafchamps (2005); and Fernández (2011).

cultural differences.[10] Guiso, Paola Sapienza, and Luigi Zingales (2016b) study historical data from the Eurobarometer surveys documenting that the considerable cross-country gaps in supporting the European Union have closed. Guiso, Helios Herrera, and Massimo Morelli (2016) stress cultural differences between Northern and Southern European countries and argue that future integration (with common enforcement) is needed to confront the "cultural clash." However, Alberto Alesina, Guido Tabellini, and Francesco Trebbi (2017) show that what is striking in the EU is the high degree of within-country (rather than cross-country) heterogeneity in beliefs and trust. Applying simple variance decompositions on various cultural proxies from the World Values Survey during the period 1980–2007, Alesina, Tabellini, and Trebbi (2017) show that within-country variation dwarfs between-country variability, a pattern that is similar across U.S. states. They show that the degree of cultural heterogeneity both across and within EU countries was similar to that in the United States, an allegedly efficient and well-functioning political and currency union.

Marie Lechler (2017) studies the impact of employment shocks on anti-EU sentiment using regional, industry-specific employment shocks and individual-level Eurobarometer survey data over the period 1996–2014. She applies panel data and instrumental variables methods to identify a strong impact of employment changes on anti-EU sentiment, especially among the unemployed and the unskilled. Our paper complements these works by studying the impact of the crisis on both attitudes toward Europe and the rise in populism. We find that the crisis has stopped the process of cultural convergence within Europe. The rise in unemployment goes hand in hand with a fall in political trust and a rise in political extremism and populism, thereby creating additional strains within the EU.

Finally, our finding that changes in economic conditions, and not their levels, is what matters is related to the "happiness" literature and the well-known Easterlin paradox of a small correlation between income and happiness in rich countries (Easterlin 1974, 2013; Kahneman and Deaton 2010; Stevenson and Wolfers 2008). Individuals appear sensitive to changes in income—rather than income levels—and this effect is transitory, because

10. Papaioannou (2015, 2016) and Alesina, Tabellini, and Trebbi (2017) stress the importance of divergence in the national institutions (courts, investor protection, and public administration). In an early contribution, Collins (1995) discussed social cohesion and support for the European Community, presenting evidence from France, Germany, and Italy.

people rather quickly adapt their expectations and habits.[11] Research in psychology also reveals a strong asymmetry in the way positive and negative economic shocks are experienced, which makes individual well-being significantly more sensitive to losses (De Neve and others, forthcoming). We find a similar relationship between unemployment and institutional trust and political attitudes.

II. Data and Descriptive Analysis

In this section, we describe our data and discuss summary statistics.

II.A. Data Description

We use three main types of data. First, we compile regional unemployment and output statistics at the NUTS 2 level of geographical aggregation from Eurostat. We also use Eurostat to extract information on the shares of six broad sectors—construction, agriculture, finance, government, manufacturing, and trade and commerce—in gross value added. The data cover 217 regions in 25 countries (we do not have information on industrial composition for Switzerland). Throughout this paper, we group the 26 countries (including Switzerland) in our sample into four broad regional categories. The North comprises Denmark, Finland, Iceland, Ireland, Norway, Sweden, and the United Kingdom. The South includes Cyprus, Greece, Italy, Portugal, and Spain. The Center consists of Austria, Belgium, France, Germany, the Netherlands, and Switzerland. And the East (the former post-Soviet transition countries) is composed of Bulgaria, the Czech Republic, Estonia, Hungary, Poland, Romania, Slovakia, and Slovenia.[12]

Second, we collect voting data for parliamentary and presidential elections using country-specific archives. We then obtain information on political parties' orientation using the Chapel Hill Expert Survey and online resources (which in turn follow Hix and Lord 1997). Although the Chapel Hill Expert Survey details many party attributes, it does not cover all parties. We have identified and classified the remaining parties based on their platforms from their websites. We focus on four aspects of antiestablishment politics: (i) far-right, often nationalistic, parties, such as the Golden Dawn in Greece and the National Front in France; (ii) radical-left parties, such as Podemos in Spain and Syriza in Greece; (iii) populist parties, such

11. For a literature review on the adaptation and habituation effect for well-being, see Clark, Frijters, and Shields (2008).

12. For robustness, we also report estimates in a sample of 11 countries at the NUTS 3 level.

as the Party for Freedom in the Netherlands and the U.K. Independence Party; and (iv) Eurosceptic and separatist parties, such as the Five Star Movement in Italy and the True Finns in Finland. These four categories are not mutually exclusive (with the exception of radical-left and far-right parties). Most populist parties are Eurosceptic, with a correlation of .76. The correlations of Euroscepticism with far-right and radical-left parties are .51 and .42, respectively. The correlation between populist and far-right parties is .52, and between populist and radical-left parties it is .55.[13]

After matching the electoral data with parties' political orientations, we calculate the percentage of votes cast for parties in each of the four orientations over the total valid votes at each election for each region. We also sum the votes of all types of nonmainstream parties, classified as far-right, radical-left, populist, and Eurosceptic or separatist.[14] We also study the dynamics of turnout, defined as the percentage of voters as a proportion of registered voters.

Third, we use individual-level data on trust, attitudes, and beliefs from the European Social Survey (ESS), conducted biennially, from 2002 until 2014. The ESS covers 32 European nations; we exclude Israel, Russia, Turkey, and Ukraine. We also drop Croatia and Lithuania, as there are no surveys for them before the crisis, and Luxembourg, which lacks a post-crisis survey. There have been seven rounds of the ESS (in 2002, 2004, 2006, 2008, 2010, 2012, and 2014). The panel is not balanced, because the ESS has not been carried out in all countries for all waves. Unfortunately, we miss the latest rounds from Greece and Italy, which have suffered considerably from the crisis. The ESS sample covers 186 NUTS 2 regions in 24 countries. The ESS administrators interview residents, regardless of their nationality, citizenship, language, or legal status. On average, each country-round survey covers approximately 2,000 individuals. The ESS asks questions on beliefs along various dimensions, such as the role of immigrants

13. The Chapel Hill Expert Survey database contains much information on parties' political platform that we do not use, the reason being incomplete coverage. Another limitation is that our classification does not reflect small movements in political ideology of mainstream parties or the election of radical candidates through mainstream parites. However, if mainstream parties also take in some extremist views or embrace populist polices, then our estimates will be conservative (Colantone and Stanig 2017; Inglehart and Norris 2016). Guiso, Herrera, and Morelli (2016) develop a model of the response of established parties to voters' beliefs and the emergence of new parties.

14. Throughout, we use "antiestablishment" and "nonmainstream" interchangeably.

and minorities, trust toward the courts and the police, and beliefs about the role of government. We focus on general trust and trust toward political institutions (politicians, national parliaments, the European Parliament, the United Nations, national courts, and the police). We also examine questions reflecting respondents' self-identified positions on the left–right continuum, satisfaction with democracy, and beliefs about whether the EU has gone too far. Because the variables have different scales, we standardize them to range between 0 and 1, with higher values indicating more trust. For the baseline analysis, we average across NUTS 2 regions for each ESS country-round, though we also use the data at the individual level when we examine heterogeneity.

The online appendix provides details on data coverage.[15] Table 1 presents summary statistics for the main variables at the regional level, distinguishing between the precrisis period (2000–08) and the postcrisis period (2009–16). In the next subsections, we provide a descriptive analysis of patterns in the data.

II.B. Unemployment, Voting, and Trust before and after the Crisis

REGIONAL UNEMPLOYMENT The left panel of figure 1 plots the evolution of unemployment (for individuals between 15 and 64 years of age) between 2000 and 2016. Precrisis unemployment was below 10 percent across all country groups. Unemployment rates in the South and the East were about 8 or 9 percent; in the Center, 6.5 to 7 percent; and in the North, 5 to 6 percent. Unemployment increased during the global financial crisis (2008–10) across all countries. However, the spike in the core was moderate, while in the South unemployment rates doubled. In Greece, unemployment (across 13 NUTS 2 areas) jumped from 9 percent in 2007 to 27 percent in 2013, and then fell to around 24 percent. Mean unemployment across Spain's 19 NUTS 2 regions jumped from 8.2 percent (median, 8.2 percent) in 2007 to 26.1 percent (median, 26.1 percent) in 2013, and then dropped to about 20 percent.

The distribution of regional unemployment rates in the right panel of figure 1 illustrates the increase in the mean and variance. Compared with the precrisis distribution, the distribution of postcrisis unemployment has a long right tail, indicative of the very high unemployment rates in some regions of the South. The standard deviation of NUTS 2 unemployment

15. The online appendixes for this and all other papers in this volume may be found at the *Brookings Papers* web page, www.brookings.edu/bpea, under "Past BPEA Editions."

Table 1. Summary Statistics[a]

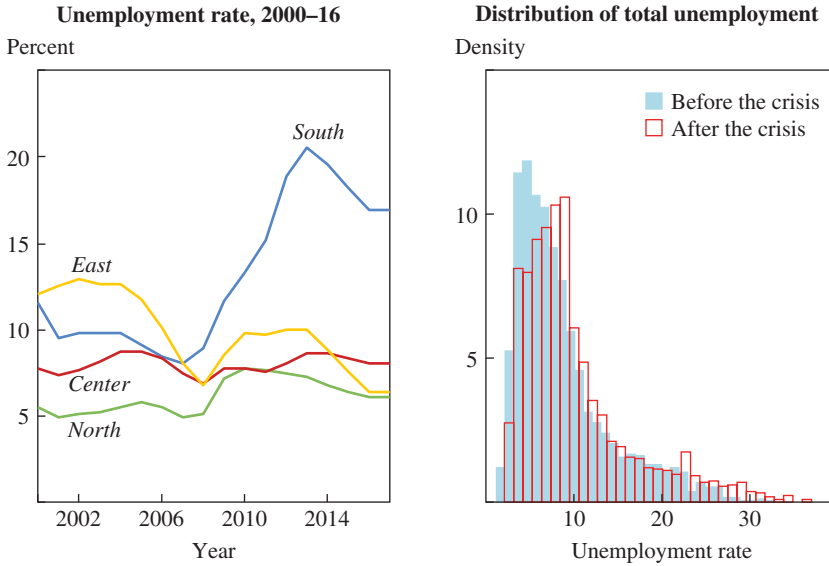
	Before the crisis (2000–08)				*After the crisis (2009–16)*			
Variable	*No. of observations (1)*	*Mean (2)*	*Median (3)*	*SD (4)*	*No. of observations (5)*	*Mean (6)*	*Median (7)*	*SD (8)*
Economic variables								
Unemployment rate	1,950	0.09	0.07	0.054	2,063	0.10	0.08	0.063
Log real GDP per capita	1,914	9.86	9.96	0.470	1,538	10.04	10.06	0.389
Employment shares								
Construction	1,914	0.07	0.07	0.022	1,391	0.06	0.06	0.019
Agriculture (including forestry and fishing)	1,905	0.04	0.03	0.037	1,384	0.03	0.02	0.026
Finance	1,914	0.21	0.21	0.058	1,391	0.22	0.23	0.059
Commerce	1,914	0.24	0.23	0.057	1,391	0.23	0.22	0.054
Government	1,914	0.23	0.22	0.061	1,391	0.24	0.24	0.068
Industry (manufacturing)	1,905	0.22	0.22	0.084	1,385	0.20	0.20	0.090
Voting variables								
Voting shares	549	0.25	0.21	0.198	503	0.32	0.33	0.188
Radical-left parties	549	0.06	0.03	0.072	503	0.08	0.03	0.112
Far-right parties	549	0.11	0.04	0.137	503	0.12	0.07	0.151
Populist parties	549	0.17	0.13	0.167	503	0.25	0.23	0.178
Eurosceptic and separatist parties	549	0.20	0.16	0.161	503	0.28	0.29	0.184
Voting participation rate	540	0.70	0.74	0.135	427	0.67	0.68	0.132
Invalid and blank vote rate	529	0.02	0.02	0.021	404	0.02	0.02	0.016

Trust and political attitudes								
Trust in other people	621	0.49	0.48	0.097	467	0.50	0.49	0.094
Belief that people are fair	621	0.55	0.56	0.091	467	0.56	0.56	0.088
Belief that people are helpful	621	0.47	0.47	0.098	467	0.49	0.49	0.093
Trust in national parliaments	621	0.45	0.46	0.104	467	0.42	0.41	0.125
Trust in politicians	621	0.35	0.35	0.097	467	0.33	0.32	0.123
Trust in the legal system	621	0.50	0.51	0.108	467	0.50	0.50	0.126
Trust in police	621	0.59	0.60	0.094	467	0.61	0.62	0.094
Satisfaction with how democracy is working	621	0.53	0.53	0.108	467	0.52	0.50	0.124
Trust in the European Parliament	621	0.46	0.46	0.065	467	0.42	0.43	0.073
Trust in the United Nations	621	0.53	0.52	0.074	467	0.51	0.51	0.085
Placement on the left–right continuum	621	0.50	0.50	0.053	467	0.51	0.51	0.054
Feeling close to a particular party	621	0.49	0.50	0.138	467	0.47	0.48	0.144
Belief that European unification should go further	455	0.54	0.53	0.085	308	0.51	0.50	0.080
Beliefs about immigration								
We should allow immigrants of the same race	621	0.59	0.59	0.095	467	0.61	0.61	0.101
We should allow immigrants of different races	621	0.50	0.51	0.105	467	0.53	0.54	0.118
We should allow immigrants from poorer countries	621	0.50	0.50	0.110	467	0.50	0.50	0.121
Belief that immigrants are good for the economy	621	0.49	0.49	0.072	467	0.49	0.49	0.082
Belief that immigrants improve cultural life	621	0.56	0.56	0.086	467	0.56	0.57	0.094
Belief that immigrants make the country a better place	621	0.48	0.48	0.076	467	0.50	0.51	0.088

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; European Social Survey.

a. The sample includes 26 European countries at the NUTS 2 level of aggregation. See the online appendix for detailed variable sources and definitions.

Figure 1. Regional Unemployment across Europe[a]



Sources: Eurostat; authors' calculations.

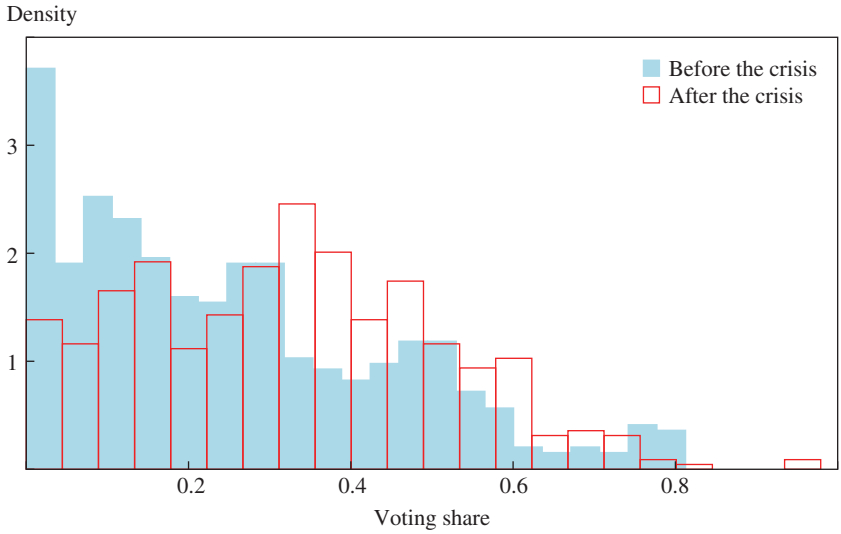
a. The sample includes 26 European countries at the NUTS 2 level of aggregation. The unemployment rate is measured as a percentage.

increases from 0.054 to 0.063; the effect again mostly comes from the South. Eight EU regions (6 in Spain and 2 in Greece) exhibit unemployment rates exceeding 30 percent in 2013; 10 other EU regions have unemployment rates between 25 and 30 percent.[16]

VOTING The second group of rows in table 1 reports the mean, median, and standard deviations of voting for antiestablishment parties and political participation before and after 2008. Mean (median) participation in general elections before the crisis is 70 percent (74 percent), while after the

16. We focus on unemployment rather than output because the latter is conceptually a less clean measure of the crisis's social costs. Moreover, regional GDP statistics are quite noisy, yielding biased (attenuated in the case of classical errors-in-variables) estimates. In the online appendix, we show that changes in regional unemployment rates and changes in log regional output covary, though the correlation is far from being perfect. Online appendix figure A1a graphs the association between unemployment and log GDP per capita, conditioning on region and general year fixed effects. There is a significant negative relationship between the two variables, with a few outliers corresponding to regions of former transition economies. Online appendix figure A1b plots the correlation of changes in regional unemployment to changes in log GDP per capita before and after the crisis. The figure paints a clearer picture regarding the loss of income and employment after the crisis across different country groups.

Figure 2. The Distribution of Voting for Antiestablishment Parties before and after the Crisis[a]



Sources: Country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.
a. The sample includes 26 European countries at the NUTS 2 level of aggregation.

crisis it falls to 67 percent (68 percent). This drop mostly comes from the South, where participation decreases from 75 to 65 percent, and from the former transition countries, where turnout drops from 55 to 53 percent. Participation falls only slightly in the North and Center.

Table 1 demonstrates the considerable increase in voting for antiestablishment parties. The mean (median) share of antiestablishment parties before the crisis (2000–08) was 25 percent (21 percent); it climbs to 32 percent (33 percent) after 2009. The increase in the voting share of antiestablishment parties is strong in the South; the change in the mean (median) is close to 10 percent (24 percent). Voting for antiestablishment parties also rises in the North, with an increase in the mean (median) of 6 percent (7 percent). Figure 2 plots the corresponding distribution. There is an evident shift of the mean and median values to the right; the shape of the distribution is also different in the second period, with an increased concentration in the range of medium and high percentages of antiestablishment outcomes.

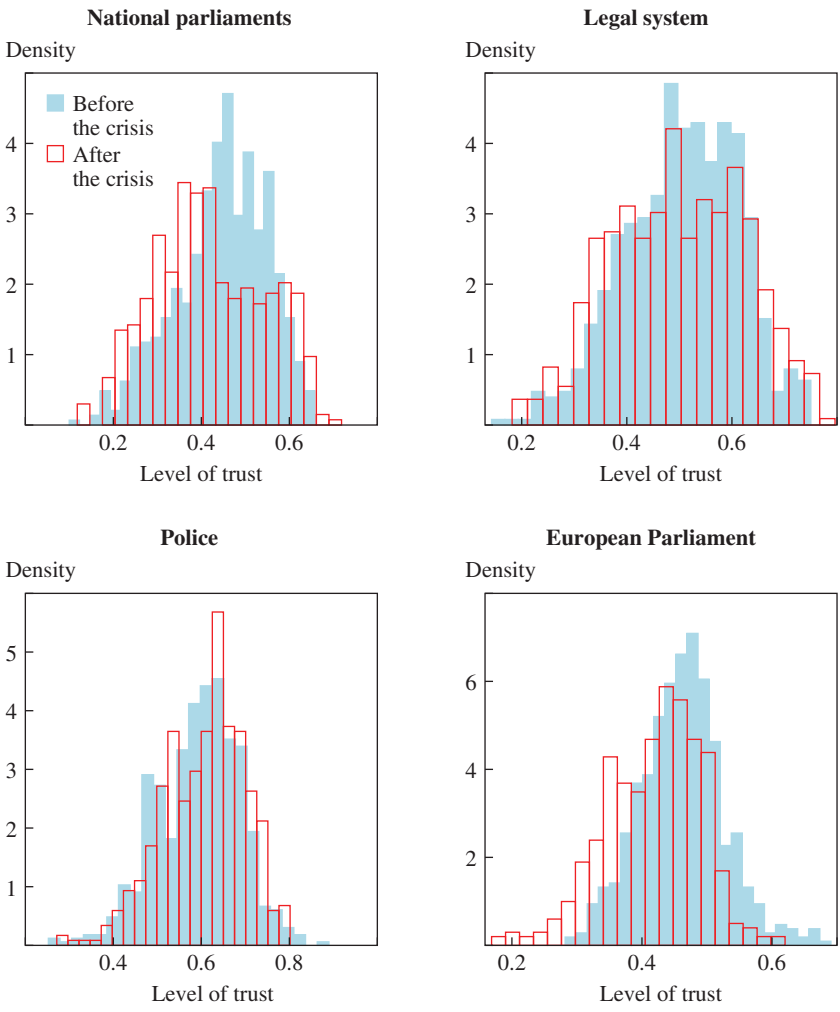
Voting shares of all four types of nonmainstream parties have increased, though at a differential pace (see online appendix figure 2). Voting for radical-left parties displays a small increase, of just 2 percent, though there is

considerable heterogeneity across countries. It grows in Spain (Podemos) and Greece (Syriza), and to a lesser extent in Portugal (Bloco de Esquerda) and Finland (Vasemmisto). It falls in Slovakia (Communist Party of Slovakia), Italy (Communist Refoundation Party), and France (Workers' Struggle). Mean (median) voting for far-right parties goes from 11 percent (4 percent) to 12 percent (7 percent). The rise of far-right parties mostly comes from the North and Center (rather than the South and Eastern European countries), where the increase is about 6 percent. The rise of far-right party voting is considerable in Hungary (an increase of approximately 20 percent) and Greece (an increase of 9 percent). Voting for populist parties increases considerably; the mean moves from 17 to 25 percent, while the median increases from 13 to 23 percent. This increase is strong in the South, North, and Center. Only in the former transition countries does the mean share for populist parties not go up considerably, as the sizable increase in Hungary, the Czech Republic, and Poland is offset by declines in Estonia, Romania, Slovenia, and Slovakia. Eurosceptic parties are also on the rise. The mean (median) vote increases by 6 percent (13 percent). This rise is strong in the South, where the mean and median both increase by 17 percent, and in the North, where the mean (median) increases from 17 percent (12 percent) to 23 percent (19 percent).

TRUST AND BELIEFS Let us start with the evolution of general trust. If anything, interpersonal trust across European regions has increased somewhat since the crisis. Though the increase in the mean and median has been small, this pattern applies to all measures of general trust (see the fourth group of rows in table 1).

The situation vis-à-vis trust toward political institutions is very different. There is a sharp decline in the trust toward national political systems in the postcrisis period. The mean value of trust toward national parliaments falls by 0.3 (from 0.45 to 0.42 on a 0–1 scale), roughly half the precrisis standard deviation. As the top left panel of figure 3 shows, after 2008 the distribution moves to the left. There is also a significant drop in a similar question reflecting trust toward politicians. The top right panel of figure 3 shows that distrust is not limited to the political system; it extends to the legal system, though to a lesser extent. The South drives this result. In the former transition countries, there is no movement, but in the countries of the European core, trust toward national courts slightly increases. Interestingly, trust toward the police moves in the opposite direction, increasing with the crisis (bottom left panel of figure 3). Distrust toward political parties and national courts reflects dissatisfaction with the functioning of democratic institutions, driven mostly by the South, where mean satisfaction falls from 0.55 to 0.40.

Figure 3. The Distribution of Trust in Institutions before and after the Crisis[a]



Sources: European Social Survey; authors' calculations.
a. The sample includes 24 European countries at the NUTS 2 level of aggregation.

To measure the change in trust toward the European Union, we use the ESS question on trust toward the European Parliament. There is a significant decline; the median drops from 0.46 to 0.43 with respect to the precrisis level. The deterioration in trust toward the EU is especially large in the South (from 0.51 to 0.37), but is present in all groups of countries. Distrust toward the EU increases in all EU countries except

for Belgium, the Netherlands, Denmark, and Sweden. The postcrisis distribution of trust toward the European Parliament has a long left tail (bottom right panel of figure 3). As Europeans' trust toward the EU has been falling, their views on whether the EU should go further or whether it has gone too far, have, on average, also changed (third group of rows in table 1). We also tabulate the distribution of trust toward the United Nations. Distrust toward the UN may capture antiglobalization sentiment or overall dissatisfaction with international institutions, but it does not have the European angle. There is some decline in trust toward the UN, but it is smaller relative to the drop in trust toward the EU. The sizable drop in trust toward the EU and domestic institutions is in line with the Eurobarometer survey data (Foster and Frieden 2017).

We also examine political positioning on the left–right continuum and closeness to a particular party. There is no indication that Europeans are, on average, moving to the left or to the right, but there is a small decline of respondents' closeness to a particular party.

Because antiestablishment, nationalistic, and populist parties often embrace antiminority or anti-immigration agendas, we examine the evolution of variables reflecting Europeans' beliefs about immigration. The fourth group of rows in table 1 gives means and medians pertaining to immigration before and after the crisis. ESS data show no major change in attitudes toward immigrants—or even a more welcoming stance. On average, Europeans are more likely to allow immigration of the same or different races (increases from 0.59 to 0.61, and from 0.50 to 0.53, respectively). They also appear ready to welcome immigrants from poorer countries, and still believe that immigrants make the country a better place to live (an increase of 2 percentage points, from 48 percent before the crisis).

III. The European Crisis and the Rise of Populism

In this section, we analyze the effect of unemployment on voting for nonmainstream parties and on turnout. First, we report the within-region correlations that assess whether the European crisis and the rise of antiestablishment vote are related. Second, we discuss an instrumental variable approach that helps identify causal effects and report the 2SLS estimates. Third, we carry out an "out-of-sample" test of the link between the crisis and populist voting, associating regional differences in unemployment across the United Kingdom during the crisis and Brexit voting.

III.A. Ordinary Least Squares Estimates

We examine the effect of unemployment on the four types of anti-establishment vote and turnout rate, using two closely related approaches that exploit the variation in NUTS 2 regions over time.[17]

First, we run panel fixed effects specifications that explore within-region variation over time. We use the full sample period that extends from 2000 until the middle of 2017 (including the recent elections in France, the Netherlands, Bulgaria, and the United Kingdom).[18] Table 2 reports the results. In the top rows, we include year dummies to account for general trends in unemployment and voting patterns across the EU. Because there are not many elections in a given year, we run specifications with four subperiod dummies. We split the sample into two precrisis periods (2000–04 and 2005–08) and two postcrisis periods (2009–12 and 2013–17). The table's middle rows present the results. In the bottom rows, we interact the period dummies with the country group dummies to allow for differential dynamics in unemployment and voting across the South, Center, East, and North of Europe.

Second, we carry out difference-in-differences estimations that associate pre- and postcrisis differences in the various electoral outcomes with the respective differences in regional unemployment. Specifically, we average all observations after the crisis (2009–17) and before the crisis (2000–08) and then estimate the model in differences.[19] Table 3 presents these estimates. In the top rows, we do not include any controls, while in the bottom rows, we add country group dummies that account for differential precrisis and postcrisis changes in unemployment and voting.

Let us first discuss the within-region correlation between total anti-establishment vote (that is, the vote for radical-left, far-right, populist, and

17. Ideally, we would want to run the specifications at the electoral district level to account for strategic voting and other unobserved issues inherent in proportional or majoritarian systems, for instance. However, we lack data on output and unemployment at the electoral district level. As Colantone and Stanig (2017) show, NUTS 2 regions include (in most countries) more than one electoral district. The analysis at the NUTS 3 level of aggregation that we conduct for a subsample of the countries partially addresses this, as electoral districts sometimes overlap with NUTS 3 level districts.

18. The specification is as follows: $y_{r,c,t} = \alpha + \beta U_{r,c,t} + a_r + d_t + \varepsilon_{r,c,t}$. Here, y denotes nonmainstream party vote in region r in country c in period t, and U denotes the regional unemployment rate. (In some specifications, we use lagged unemployment and other controls.)

19. The difference specification is: $\Delta y_{r,post-pre} = \alpha + \beta \Delta U_{r,post-pre} + \varepsilon_r$, where Δy and ΔU denote changes in regional nonmainstream party vote and unemployment over the postcrisis period (mean over 2009–17) and the precrisis period (mean over 2000–08). Dropping 2008 altogether or assigning it to the postcrisis period does not change the results in any way.

Table 2. Regional Unemployment and Voting for Antiestablishment Parties, 2000–17[a]

	Antiestablishment parties (all types) (1)	*Radical-left parties* (2)	*Far-right parties* (3)	*Populist parties* (4)	*Eurosceptic parties* (5)	*Voting participation rate* (6)
Year fixed effects						
Unemployment rate	0.9279**	0.5542*	0.1638	1.0837***	0.8463**	–0.3421**
	(0.3344)	(0.3084)	(0.2079)	(0.3195)	(0.3172)	(0.1542)
Standardized β	0.288	0.357	0.068	0.370	0.288	–0.157
Adjusted R^2	0.396	0.428	0.200	0.476	0.422	0.379
Within R^2	0.407	0.438	0.214	0.485	0.432	0.391
Period fixed effects[b]						
Unemployment rate	1.1048***	0.7699**	0.1912	1.1270***	0.9786**	–0.4375**
	(0.3347)	(0.3260)	(0.1783)	(0.3458)	(0.3782)	(0.1647)
Standardized β	0.343	0.495	0.079	0.385	0.332	–0.201
Adjusted R^2	0.318	0.203	0.103	0.394	0.378	0.242
Within R^2	0.320	0.206	0.106	0.397	0.380	0.245
Group-period fixed effects[c]						
Unemployment rate	0.9735**	0.4935	0.4434**	0.9145**	0.7107*	–0.4902**
	(0.3999)	(0.3901)	(0.2122)	(0.4125)	(0.3873)	(0.1919)
Standardized β	0.302	0.317	0.184	0.312	0.241	–0.225
Adjusted R^2	0.338	0.346	0.197	0.411	0.418	0.370
Within R^2	0.347	0.354	0.208	0.418	0.425	0.379
No. of countries	26	26	26	26	26	25
No. of regions	225	225	225	225	225	223
No. of observations	1,030	1,030	1,030	1,030	1,030	945

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. This table reports OLS fixed effects panel regression estimates. See the online appendix for detailed variable sources and definitions. All specifications include NUTS 2 region fixed effects. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for the periods 2000–04, 2005–08, 2009–12, and 2013–17.

c. Fixed effects are included for group-periods. Country groups are North, South, East, and Center. Periods are 2000–04, 2005–08, 2009–12, and 2013–17.

Table 3. Regional Unemployment and Voting for Antiestablishment Parties before and after the Crisis[a]

	Antiestablishment parties (all types) (1)	*Radical-left parties* (2)	*Far-right parties* (3)	*Populist parties* (4)	*Eurosceptic parties* (5)	*Voting participation rate* (6)
General constant term						
Difference in unemployment rate	0.9760***	0.7033**	0.1429	1.1052***	0.8735***	–0.3071*
	(0.3011)	(0.3253)	(0.2082)	(0.2811)	(0.2697)	(0.1732)
Standardized β	0.417	0.530	0.103	0.458	0.380	–0.324
Adjusted R^2	0.17	0.277	0.006	0.206	0.141	0.101
Country group fixed effects[b]						
Difference in unemployment rate	1.1629**	0.7099	0.6362*	1.1723***	0.2762	–0.1490
	(0.5115)	(0.5401)	(0.3240)	(0.4074)	(0.3221)	(0.2602)
Standardized β	0.496	0.535	0.460	0.485	0.120	–0.157
Adjusted R^2	0.174	0.282	0.159	0.204	0.198	0.282
No. of countries	25	25	25	25	25	24
No. of regions	222	222	222	222	222	210

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. This table reports OLS cross-sectional regression estimates. See the online appendix for detailed variable sources and definitions. The dependent variable is the change in voting behavior before and after the crisis at the NUTS 2 level of aggregation. The independent variable is the change in regional unemployment before and after the crisis. For both the dependent and independent variables, we take the difference between the mean values over the postcrisis period (2009–17) and the precrisis period (2000–08). Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for the country groups North, South, East, and Center.

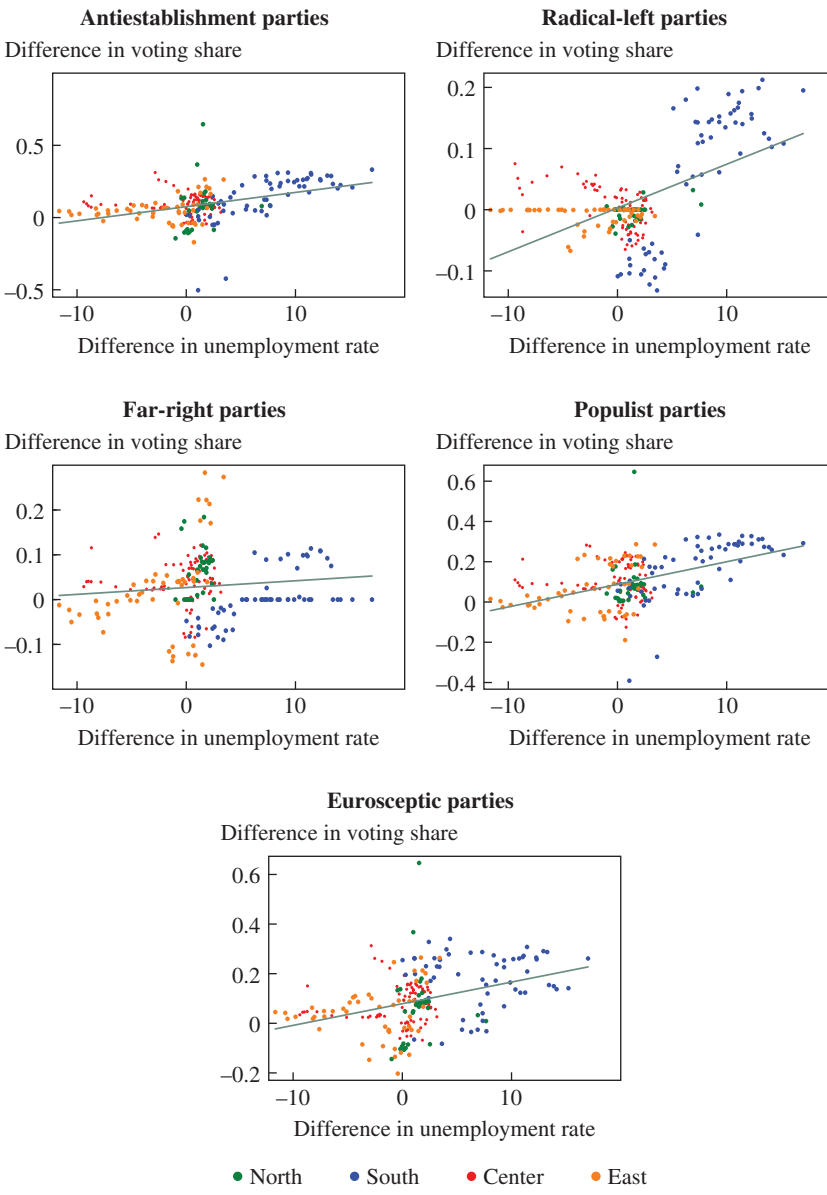
Eurosceptic parties) and unemployment. The unemployment coefficient is significant in all the rows of table 2. There is a one-to-one relationship between unemployment and antiestablishment voting. The before/after specification in column 1 of table 3 yields an estimate that is statistically significant and similar in magnitude. The link between unemployment and antiestablishment voting is strongest in the South (where the crisis has been the deepest), and is considerable in the East (the magnitude is 0.5); but it is weak in the North and the Center (the results for the four country groups are available on request). The top left panel of figure 4 illustrates the before/after correlation, distinguishing between NUTS 2 regions across the main macro regions.

In columns 2 and 3 of tables 2 and 3, we separately assess the role of unemployment in voting for radical-left and far-right parties. The results in table 2's middle rows suggest that higher unemployment fuels voting for radical-left parties. A similar pattern emerges in the top rows of table 3.

The results change, however, when we add country group–specific period effects (bottom rows of tables 2 and 3). The estimates are now comparable in magnitude (both in the panel and difference specifications), but the coefficients for radical-left and Eurosceptic parties are no longer significant; the coefficient on unemployment is statistically significant in the voting for far-right and populist parties. We further examine the relationship between unemployment and specific types of antiestablishment voting in each of the four main macro regions (the results are available on request). The link between unemployment and the far-right vote is stronger in the South and somewhat weaker in the East. In contrast, the relationship between unemployment and the radical-left vote is quite heterogeneous. It is strong in the South (with the rise of Podemos in Spain and Syriza in Greece), positive in the North, insignificant in the Center, and negative and significant in the former transition countries, where people seem to turn their backs on communist parties, and instead lean toward right-wing nationalists.

In column 4 of tables 2 and 3, we examine voting for populist parties. In all specifications, coefficients are positive and highly significant. The results from the before/after crisis estimations are also highly significant (table 3), as shown also in the middle right panel of figure 4. The standardized beta coefficient (the effect of a 1 standard deviation change in the independent variable, expressed in terms of standard deviations of the dependent variable) is about 0.4 in the panel specifications and 0.5 in the difference specifications. A 1 percentage point increase in unemployment is associated with a 1 percentage point increase in the populist vote. When

Figure 4. Regional Unemployment and Voting Patterns before and after the Crisis[a]



Sources: Country-specific electoral archives; Chapel Hill Expert Survey; Eurostat; authors' calculations.

a. The sample includes 26 European countries at the NUTS 2 level of aggregation. The unemployment rate is measured as a percentage.

we estimate the models by country groups, we find a strong effect in the South; the relationship is also present in the East and the Center, but is not significant in the North.

In column 5 of tables 2 and 3, we focus on the share of parties with a Eurosceptic or separatist agenda. The coefficients on unemployment in the top and middle rows of table 2 and the top rows of table 3 are statistically significant, and are not far from 1. The bottom panel of figure 4 illustrates this pattern; while the positive relationship between unemployment and the Eurosceptic vote pertains in all four macro regions, once we account for differential macro region trends, the estimates drop and lose significance. In column 6 of tables 2 and 3, we focus on turnout. An increase in unemployment of 5 percentage points (1 standard deviation) is associated with a decrease in turnout of 2.5 percentage points (about 0.2 standard deviation). The difference specifications yield less clear, though similar, results. The correlation is present in the top row of table 3, but once we account for different trends in the North, South, East, and Center, it loses significance.[20]

CRISIS AND RECESSION We also examine the correlation between unemployment and antiestablishment voting, dropping regions with very high or considerable increases in unemployment (which are mostly in the South). This is useful both to assess the outliers and to examine whether the relationship between unemployment and voting outcomes emerges only in severely crisis-hit regions. The correlation retains statistical significance when we exclude high-unemployment regions (the top 5 percent or even the top 10 percent, with rises of unemployment exceeding 8.5 percent), though the estimate drops. When we drop the top 25 percent, the estimate drops further (to about 0.5) and becomes statistically insignificant (with t statistics of about 1.3 to 1.5). This suggests that it is the severity of the crisis and the associated sharp increase in unemployment that fuel support for nonmainstream parties (for associated cross-country results, see Matakos and Xefteris 2017).

NUTS 3 ANALYSIS To further account for unobservable time-invariant features, we estimate specifications at a finer regional level. We aggregate the voting data at NUTS 3 regions; using data from Cambridge Econometrics on employment rates, we rerun the analysis for 363 regions in 11 coun-

20. Using ESS data, Guiso and others (2017) estimate "selection" models that jointly associate unemployment with turnout and voting. They also find that unemployment and economic insecurity are associated with a fall in turnout.

tries.[21] Table 4 presents the results. The elasticity of nonmainstream party voting with regard to employment is –1. This is mostly driven by voting for populist parties. When we allow for differential time trends in the core and on the periphery, we obtain attenuated estimates, because most of the variation comes from the differences between regions on the periphery and in the core. Yet the effects are still statistically significant. The results remain intact when we add country group–specific time effects (online appendix table 2).

III.B. Instrumental Variables Estimation

The ordinary least squares (OLS) estimates linking unemployment with voting do not necessarily imply a causal relationship. By exploiting within-region variation, we control for all time-invariant features shaping voting for nonmainstream parties and unemployment. However, we cannot rule out the fact that omitted time-varying regional factors drive the correlation. Another potential problem is reverse causation, though few would argue that it was the rise in populist and Eurosceptic voting (and the decline in political trust, discussed in the next section) that led to the downturn of 2008–10 and the deep recession on the European periphery. Yet another concern is errors-in-variables that is likely to be nonnegligible. Unemployment statistics are noisy; they do not account well for part-time employment and for those workers who are only marginally attached to the labor force. Moreover, official statistics miss activities in the shadow economy, which may be important in the South and the East.

To explore causality, we develop an instrumental variables approach that uses the share of construction in regional value added as an excluded, Bartik-style instrument.[22] Construction and real estate played a key role in the buildup to the 2008–09 financial crisis and its severity (Fernández-Villaverde, Garicano, and Santos 2013; Fernández-Villaverde and Ohanian 2009; Lane 2014; Reis 2015). The rise of construction and real estate services was important in the precrisis boom in Spain, Ireland, Portugal, Greece, the United Kingdom, Cyprus, and some Eastern European countries, contributing to misallocation and asset price inflation (Gopinath and others 2017).

21. These countries are Austria (with 35 regions), Bulgaria (28), Czech Republic (14), Greece (51), Spain (59), France (100), Hungary (20), Ireland (8), Norway (19), Sweden (21), and Slovakia (8). We use employment–population ratios for this analysis because unemployment rates are not available at the NUTS 3 level.

22. See Goldsmith-Pinkham, Sorkin, and Swift (2017) for a discussion of Bartik instruments.

Table 4. Regional Employment–Population Ratios and Voting for Antiestablishment Parties[a]

	Antiestablishment parties (all types) (1)	*Radical left parties* (2)	*Far-right parties* (3)	*Populist parties* (4)	*Eurosceptic parties* (5)	*Participation rate* (6)
OLS panel fixed effects regressions with period fixed effects[b]						
Employment–population ratio	–1.0077***	–0.7803***	–0.0372	–1.0129***	–0.8522**	0.1256
	(0.2832)	(0.2251)	(0.2278)	(0.2181)	(0.3405)	(0.1959)
Standardized β	–0.356	–0.538	–0.017	–0.380	–0.302	0.097
Adjusted R^2	0.331	0.149	0.166	0.454	0.279	0.151
Within R^2	0.332	0.151	0.168	0.456	0.281	0.153
No. of observations	1,675	1,675	1,675	1,675	1,675	1,632
OLS difference specifications[c]						
Employment–population ratio	–0.8675**	–0.6707***	0.0462	–0.8124**	–0.6056*	0.1382
	(0.2985)	(0.1944)	(0.2410)	(0.2690)	(0.3214)	(0.2138)
Standardized β	–0.294	–0.314	0.028	–0.265	–0.194	0.102
Adjusted R^2	0.084	0.096	–0.002	0.068	0.035	0.008
No. of countries	11	11	11	11	11	11
No. of regions	355	355	355	355	355	355

Sources: Cambridge Econometrics; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. See the online appendix for detailed variable sources and definitions. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. This panel reports OLS fixed effects panel regression estimates. Fixed effects are included for NUTS 3 regions and for the periods 2000–04, 2005–08, 2009–12, and 2013–17. For both the dependent and independent variables, we take the difference between the mean values over the postcrisis period (2009–17) and the precrisis period (2000–08).

c. This panel reports OLS cross-sectional regression estimates. The dependent variable is the change in voting behavior before and after the crisis at the NUTS 3 level of aggregation. The independent variable is the change in regional employment–population ratios before and after the crisis.

Our identification strategy is based on two assumptions. First, the share of construction in the regional economy affects unemployment, even when accounting for other sectoral shares. Below, we show that this is indeed the case. Second, the share of construction should affect voting (trust and beliefs) only via its impact on unemployment. In the before/after specifications, the precrisis share of construction in regional value added should affect the changes in voting (and other outcomes) via its impact on the increase in regional unemployment.

Although directly testing the "exclusion restriction" is not possible, it seems reasonable that the primary impact of changes in regional specialization on voting and attitudes is via unemployment, especially in the short term, on which we are focusing. Construction may affect voting via alternative mechanisms, for example, via corruption, immigration, or human capital. Though we cannot fully rule out these channels, we provide evidence below that they are unlikely to be important in our case.

The average share of construction in regional value added in our sample is 6.5 percent (the median is 7 percent). Together with agriculture, it is one of the less important broad sectors in our sample (see table 1). Therefore, swings in the share of construction are less likely to be endogenous to unobserved features that may affect voting and trust. There is substantial cross-sectional variation in the share of construction; the range across the 227 regions in 2007 is from 2.35 to 15.25 percent. The within-country variation is also large. The construction share in Greece ranges from 6.3 to 11.4 percent; in Germany, from 2.1 to 6.2 percent; in Italy, from 4.8 to 7.9 percent; and in Belgium, from 2.8 to 7.8 percent.

FIRST-STAGE RESULTS: CONSTRUCTION AND UNEMPLOYMENT We start with an examination of the first-stage relationship between unemployment and the share of construction in regional value added. Table 5 reports the results. The top rows present panel specifications with region fixed effects and year dummies (in columns 1 and 2) and country group–specific year effects (in columns 3 and 4). The coefficient on the share of construction is highly significant. The most conservative estimate is in column 4, where we allow for different trends across the country groups and control for regions' industrial composition, which implies that an increase of 1 percentage point in the share of construction is associated with a drop in unemployment of 0.93 percentage point. This translates into a standardized beta coefficient of about 0.3.[23] The top panels of figure 5 plot the correlation between the

23. In online appendix table 3, we use lagged values of construction and other industry shares. The results are similar.

Table 5. Construction Share in Regional Value Added and Regional Unemployment[a]

	(1)	*(2)*	*(3)*	*(4)*
OLS panel fixed effects regressions[b]				
Construction share in value added	–1.6997*** (0.2906)	–1.3106*** (0.2354)	–1.0198*** (0.2829)	–0.9317*** (0.2510)
Adjusted R^2	0.457	0.540	0.590	0.628
Within R^2	0.460	0.543	0.598	0.635
No. of countries	24	24	24	24
No. of regions	221	221	221	221
No. of observations	3,161	3,161	3,161	3,161
Region fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	No	No
Group-year fixed effects	No	No	Yes	Yes
Controls for other industrial shares[c]	No	Yes	No	Yes
OLS difference specifications[d]				
Precrisis construction share in value added	1.2478*** (0.3197)	1.4679*** (0.3436)	0.6705** (0.2486)	0.6701*** (0.2165)
Adjusted R^2	0.282	0.343	0.597	0.633
No. of countries	22	22	22	22
No. of regions	211	211	211	211
Country group fixed effects	No	No	Yes	Yes
Controls for other industrial shares[d]	No	Yes	No	Yes

Sources: Eurostat; authors' calculations.

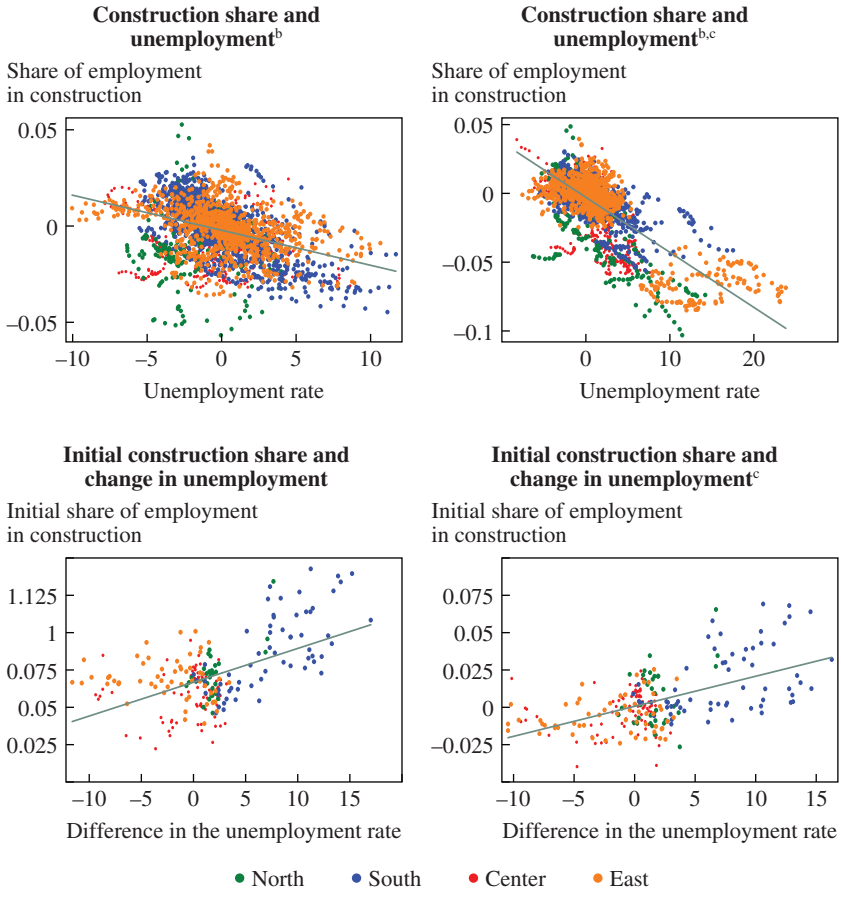
a. See the online appendix for detailed variable sources and definitions. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. This panel reports OLS fixed effects panel regression estimates. The dependent variable is the regional unemployment rate. The independent variable is the share of regional value added for construction.

c. Controls are included for the share of regional value added for agriculture (including fishing, forestry, and mining), trade, finance, and government services.

d. This panel reports OLS cross-sectional regression estimates. The dependent variable is the change in the regional unemployment rate before and after the crisis at the NUTS 2 level of aggregation. For the dependent variable, we take the difference between the mean value over the postcrisis period (2009–17) and the precrisis period (2000–08). The independent variable is the mean regional share of value added for construction before the crisis.

Figure 5. Regional Unemployment and the Share of Employment in Construction before and after the Crisis[a]



Sources: Eurostat; authors' calculations.

a. The sample includes 26 European countries at the NUTS 2 level of aggregation. The unemployment rate is measured as a percentage.

b. Controlling for region and time.

c. Controlling for industrial composition.

construction share and unemployment, controlling for region and period (and the shares of all other sectors). The relationship is significant in all country groups.

In the bottom rows of table 5, we focus on the impact of the crisis. The dependent variable is the difference in regional unemployment between the precrisis and postcrisis periods. For the postcrisis period, we take the average over 2009–16; and for the precrisis period, we use the 2000–08 mean. The main independent variable is the precrisis share of construction. Because sectoral shares are noisy and there are gaps in the Eurostat data, we use the 2004–07 mean.[24] A higher precrisis share of construction is associated with an increase in regional unemployment after 2008–09. The coefficient on the precrisis share of construction is significant, implying that regional specialization in construction in the boom years 2002–07 contributed to the rise in unemployment after 2008–10. The estimate in column 4 of table 5 is 0.67 (standardized beta of 0.29), which is quite similar to the specifications in the full panel.[25] The bottom panels of figure 5 illustrate the relationships between postcrisis and precrisis differences.

REDUCED-FORM ESTIMATES: CONSTRUCTION SHARE AND VOTING OUTCOMES

We now turn to the reduced-form specifications that associate voting patterns with the precrisis share of construction. Table 6 reports the panel estimates. There is a strong relationship between the share of construction in the regional economy and the voting share of the antiestablishment parties. This result holds in all specifications. The coefficients in column 1 imply that an increase of 1 percentage point in the share of construction is associated with an increase of approximately 3 percentage points in the antiestablishment vote. The effect is strongest for populist parties (with a coefficient

24. In online appendix table 4, we show that using 2007 or earlier years yields similar though attenuated coefficients.

25. In online appendix table 5, we regress changes in unemployment over various periods (2008–16, 2008–15, 2008–14, 2008–13, and 2008–12) on the precrisis share of construction (conditional on other sectoral shares and country group fixed effects). The initial share of construction always enters with a negative coefficient that is larger (and more precisely estimated), when we look at the immediate aftermath of the crisis. The coefficient on the initial construction share when we focus on changes in unemployment over the 2008–12 period is 0.64; it declines to 0.40 for 2008–15 and to 0.27 for 2008–16. As the European economies recover from the recession of 2009–12, the role of the precrisis construction weakens. Likewise, we associated five-, six-, and seven-year changes in regional unemployment to the initial share of construction. Construction enters with a significantly positive coefficient only when we look at postcrisis versus precrisis windows. When we examine the association before the crisis or in 2008–16, there is no systematic link between changes in unemployment and construction.

Table 6. Construction Share in Regional Value Added and Voting for Antiestablishment Parties, 2000–17[a]

	Antiestablishment parties (all types) (1)	*Radical-left parties* (2)	*Far-right parties* (3)	*Populist parties* (4)	*Eurosceptic parties* (5)	*Voting participation rate* (6)
Year fixed effects						
Construction share in value added	–2.8453***	–0.9838***	–1.5704**	–3.3221***	–1.8339**	0.0972
	(0.5849)	(0.3192)	(0.6814)	(0.6191)	(0.6983)	(0.8176)
Adjusted R^2	0.418	0.396	0.202	0.523	0.438	0.326
Within R^2	0.429	0.407	0.217	0.532	0.449	0.340
Period fixed effects[b]						
Construction share in value added	–3.0281***	–1.4731***	–1.2111	–3.0258***	–2.2752***	0.2609
	(0.4766)	(0.4456)	(0.7319)	(0.6175)	(0.5881)	(0.8441)
Adjusted R^2	0.292	0.161	0.115	0.363	0.352	0.123
Within R^2	0.296	0.165	0.120	0.366	0.355	0.127
Group-period fixed effects[c]						
Construction share in value added	–3.9207***	–1.8297**	–1.7359***	–3.3981***	–2.4510***	–0.0312
	(0.8078)	(0.7961)	(0.6051)	(0.6892)	(0.6529)	(0.7172)
Adjusted R^2	0.346	0.240	0.268	0.385	0.429	0.264
Within R^2	0.356	0.251	0.279	0.395	0.438	0.276
No. of countries	24	24	24	24	24	23
No. of regions	216	216	216	216	216	214
No. of observations	846	846	846	846	846	803

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. This table reports OLS fixed effects panel regression estimates. See the online appendix for detailed variable sources and definitions. All specifications include NUTS 2 region fixed effects. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for the periods 2000–04, 2005–08, 2009–12, and 2013–17.

c. Fixed effects are included for group-periods. Country groups are North, South, East, and Center. Periods are 2000–03, 2004–08, 2009–12, and 2013–17.

of about 3), followed by Eurosceptic parties (about 2) and radical-left and far-right parties (between 0.9 and 1.8). There is no effect on turnout.

One may wonder whether the voting outcomes are associated with the share of some other sectors (rather than construction). We reestimate all the specifications in table 6, controlling for all sectoral shares. Online appendix table 6 reports the panel estimates that associate voting patterns for nonmainstream parties and turnout with the shares in regional value added of construction, agriculture (including forestry, fishing, and mining), trade, government, and finance (with manufacturing serving as the omitted category).[26] The construction share enters all specifications with a negative coefficient that is usually statistically significant. The coefficient on the regional construction share in explaining voting for antiestablishment parties in column 1 of online appendix table 6 is –3.2, quite similar to the unconditional estimate. Furthermore, no consistent pattern emerges regarding the link between voting for nonmainstream parties and the shares of other sectors.

We also estimate reduced-form before/after crisis specifications; these specifications, reported in table 7, associate *changes* in voting patterns before and after the crisis with the precrisis share of construction (conditional also on country group dummies and/or shares of all other sectors in regional value added). The merit of the difference specifications is that the precrisis share of construction is less likely to affect changes in voting directly or through channels other than its impact on regional unemployment. We find that the precrisis share of construction correlates with precrisis versus postcrisis changes in nonmainstream party voting.[27]

TWO-STAGE LEAST SQUARES ESTIMATES Table 8 presents 2SLS estimates that combine the reduced-form estimates with the first-stage results. The top section presents 2SLS panel fixed effects estimates, controlling for period. In the second section, we control for the share of agriculture, finance, commerce, and government services in regional value added. In the third and fourth sections, we include country group–specific period dummies that account for differential trends across Europe in unemployment, regional specialization, and voting.[28]

26. We also reestimated the panel specifications using lagged values of construction and other sectors. The results are similar and not reported for brevity.

27. Online appendix figure 8 illustrates the reduced-form relationship between the precrisis share of construction and changes in voting for nonmainstream parties and turnout.

28. As shown in the table, the Kleibergen–Paap *F* statistics for the first stage are 28, 21, 15, and 17. The critical values of the Stock and Yogo (2005) weak instrument test statistic are 16.38 and 8.96, respectively, for the 10 and 15 percent levels (see also Staiger and Stock 1997).

Table 7. Precrisis Construction Share in Regional Value Added and Changes in Voting for Antiestablishment Parties[a]

	Antiestablishment parties (all types) *(1)*	*Radical-left parties* *(2)*	*Far-right parties* *(3)*	*Populist parties* *(4)*	*Eurosceptic parties* *(5)*	*Participation rate* *(6)*
General constant term						
Precrisis construction share in value added	1.6164**	1.4561**	–0.3224	1.6953**	1.0000*	–0.32
	(0.5945)	(0.6075)	(0.3773)	(0.6863)	(0.5479)	(0.2938)
Adjusted R^2	0.093	0.215	0.005	0.088	0.034	0.017
Group-period fixed effects[b]						
Precrisis construction share in value added	1.6091**	1.2886	0.0359	1.4508**	0.0412	0.1416
	(0.7744)	(0.8453)	(0.5366)	(0.6786)	(0.5133)	(0.2859)
Adjusted R^2	0.143	0.271	0.094	0.145	0.209	0.263
No. of regions	23	23	23	23	23	21
No. of observations	209	209	209	209	209	195

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. This table reports OLS cross-sectional regression estimates. See the online appendix for detailed variable sources and definitions. The dependent variable is the change in voting behavior before and after the crisis at the NUTS 2 level of aggregation. The independent variable is the share of construction in value added before the crisis. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for the country groups North, South, East, and Center.

Table 8. Regional Unemployment and Voting for Antiestablishment Parties, 2000–17[a]

	Antiestablishment parties (all types) (1)	*Radical-left parties* (2)	*Far-right parties* (3)	*Populist parties* (4)	*Eurosceptic parties* (5)	*Voting participation rate* (6)
Period fixed effects, no controls for other industrial shares[b]						
Unemployment rate	2.0530***	0.9987***	0.8211	2.0514***	1.5425***	–0.2023
	(0.4182)	(0.2403)	(0.5826)	(0.5253)	(0.5150)	(0.4969)
Kleibergen–Paap *F* statistic	27.68	27.68	27.68	27.68	27.68	28.43
	No	No	No	No	No	No
Period fixed effects, controls for other industrial shares[b,c]						
Unemployment rate	2.7874***	1.3412***	0.9869	2.4567***	1.8994***	–0.5591
	(0.8105)	(0.4197)	(0.7486)	(0.7804)	(0.7324)	(0.5033)
Kleibergen–Paap *F* statistic	21.17	21.17	21.17	21.17	21.17	20.82
	Yes	Yes	Yes	Yes	Yes	Yes
Group-period fixed effects, no controls for other industrial shares[d]						
Unemployment rate	4.0528***	1.8914***	1.7944**	3.5126***	2.5336**	0.0316
	(1.0078)	(0.6196)	(0.8317)	(0.9418)	(0.9846)	(0.7108)
Kleibergen–Paap *F* statistic	15.38	15.38	15.38	15.38	15.38	15.12
	No	No	No	No	No	No
Group-period fixed effects, controls for other industrial shares[c,d]						
Unemployment rate	4.4045***	2.2118***	1.5979**	3.6451***	2.6365***	–0.2851
	(1.0688)	(0.7089)	(0.6453)	(0.9199)	(0.8983)	(0.5427)
Kleibergen–Paap *F* statistic	17.426	17.426	17.426	17.426	17.426	17.047
	Yes	Yes	Yes	Yes	Yes	Yes
No. of countries	23	23	23	23	23	22
No. of regions	209	209	209	209	209	198
No. of observations	839	839	839	839	839	787

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. This table reports 2SLS fixed effects panel regression estimates. See the online appendix for detailed variable sources and definitions. The first stage uses the share of construction in regional value added as an instrument for regional unemployment. All specifications include NUTS 2 region fixed effects. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for the periods 2000–04, 2005–08, 2009–12, and 2013–17.

c. Controls are included for the share of regional value added for agriculture (including fishing, forestry, and mining), trade, finance, and government services.

d. Fixed effects are included for group-periods. Country groups are North, South, East, and Center. Periods are 2000–04, 2005–08, 2009–12, and 2013–17.

In all specifications, unemployment (instrumented by the share of construction in regional value added) has a statistically significant effect on the antiestablishment vote. The 2SLS coefficient is somewhat higher than in OLS. An increase in unemployment of 1 percentage point is associated with an increase of 2 to 4.4 percentage points in the share of the antiestablishment vote. The effect is strongest for populist parties. We find no significant impact of unemployment on voter turnout. The difference specifications in table 9 yield similar—albeit somewhat smaller—estimates. A 1 percentage point higher share of construction before the crisis is associated with an increase in the vote share of the antiestablishment parties of 1.3 to 2.4 percentage points.[29]

IDENTIFICATION ISSUES AND INSTRUMENT VALIDITY CHECKS The reduced-form link between the share of construction in regional value added and voting patterns and the strong relationship between construction and unemployment do not necessarily imply a causal nexus between construction, unemployment, and nonmainstream voting. The necessary condition for causality is that construction does not affect voting directly or via other channels besides unemployment. It is impossible to test this condition formally, given that the structure of the regional economy is not random and is related to various socioeconomic factors that can also affect political outcomes. In this subsection, we examine several alternative explanations.

The first alternative explanation relates to corruption. It is possible that construction, a sector dependent on government connections, promotes bribery, which in turn affects voting for nonmainstream parties.[30] Given that the ESS includes three corruption perception questions (though only in the 2004 round), we examine the link between the share of construction and self-reported perceptions of corruption. As reported in online appendix table 8, we fail to detect any significant correlation.

The second potential mechanism involves education. Construction is not a skill-intensive sector; thus, regions specializing in construction or experiencing increases in construction may have lower levels of human capital. In this case, the 2SLS estimates may pick up the role of education. Columns 1 through 3 of table 10 report panel and difference 2SLS specifications,

29. Online appendix table 7 reports similar specifications; but because the rise of populist, radical-left, and far-right parties occurred after the crisis, we associate changes in antiestablishment voting from 2004–07 to 2013–17 with the corresponding changes in unemployment instrumented with the precrisis construction share. The 2SLS coefficients are similar.

30. For an overview of research on the electoral consequences of corruption, see De Vries and Solaz (2017).

Table 9. Regional Unemployment and Voting for Antiestablishment Parties before and after the Crisis[a]

	Antiestablishment parties (all types) (1)	*Radical-left parties* (2)	*Far-right parties* (3)	*Populist parties* (4)	*Eurosceptic parties* (5)	*Voting participation rate* (6)
General constant term						
Difference in unemployment rate	1.2744***	1.1501***	–0.2558	1.3367***	0.7875**	–0.2498
	(0.3243)	(0.4003)	(0.2924)	(0.3688)	(0.3823)	(0.2343)
Cragg–Donald *F* statistic	84.47	84.47	84.47	84.47	84.47	80.65
Kleibergen–Paap *F* statistic	15.84	15.84	15.84	15.84	15.84	16.36
Country group fixed effects[b]						
Difference in unemployment rate	2.3511***	1.8808**	0.0542	2.1200***	0.0624	0.2026
	(0.7164)	(0.7676)	(0.7488)	(0.7346)	(0.7368)	(0.4127)
Cragg–Donald *F* statistic	31.648	31.648	31.648	31.648	31.648	30.520
Kleibergen–Paap *F* statistic	7.60	7.60	7.60	7.60	7.60	7.82
No. of countries	207	207	207	207	207	195
No. of regions	22	22	22	22	22	21

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. This table reports 2SLS cross-sectional regression estimates. See the online appendix for detailed variable sources and definitions. The first stage uses the precrisis share of construction in regional value added as an instrument for regional unemployment. For both the dependent and independent variables, we take the difference between the mean values over the postcrisis period (2009–17) and the precrisis period (2000–08). Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for the country groups North, South, East, and Center.

Table 10. Regional Unemployment and Voting for Antiestablishment Parties, Conditional on Education and Immigration[a]

	Antiestablishment parties (all types) (1)	*Populist parties* (2)	*Eurosceptic parties* (3)	*Antiestablishment parties (all types)* (4)	*Populist parties* (5)	*Eurosceptic parties* (6)
2SLS fixed effects panel regressions[b]						
Lagged unemployment rate	2.0502***	2.0201***	1.4113***	2.0920***	2.0731***	1.4811***
	(0.3101)	(0.3145)	(0.3916)	(0.3377)	(0.3531)	(0.4063)
Lagged college attainment[c]	0.0063	0.0039	0.0041			
	(0.0068)	(0.0061)	(0.0039)			
Lagged net migration indicator[d]				0.0089	0.011	0.0151
				(0.0126)	(0.0152)	(0.0120)
Kleibergen–Paap *F* statistic	65.77	65.77	65.77	58.52	58.52	58.52
No. of observations	831	831	831	833	833	833
No. of countries	22	22	22	23	23	23
2SLS cross-sectional regressions[e]						
Difference in unemployment rate	1.3195***	1.3342***	0.7808**	1.3505***	1.3796***	0.8419**
	(0.3206)	(0.3558)	(0.3387)	(0.3661)	(0.4114)	(0.4121)
Precrisis college attainment[c]	0.0012	–0.0008	–0.0011			
	(0.0020)	(0.0022)	(0.0021)			
Precrisis net migration indicator[d]				–0.0213	–0.0048	–0.0133
				(0.0267)	(0.0304)	(0.0268)
Kleibergen–Paap *F* statistic	22.078	22.078	22.078	19.706	19.706	19.706
No. of regions	202	202	202	201	201	201
No. of countries	22	22	22	22	22	22

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. See the online appendix for detailed variable sources and definitions. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. This panel reports 2SLS fixed effects panel regression estimates. The first stage uses the lagged share of construction in regional value added as an instrument for lagged regional unemployment. All specifications include NUTS 2 region fixed effects and fixed effects for the periods 2000–04, 2005–08, 2009–12, and 2013–17.

c. Controls are included for the share of the regional population that has completed postsecondary education.

d. Controls are included for whether a region experienced positive net migration.

e. This panel reports 2SLS cross-sectional regression estimates. The first stage uses the precrisis share of construction in regional value added as an instrument for changes in regional unemployment before and after the crisis.

controlling for education (in particular, the share of regional population with completed postsecondary education). To further assuage endogeneity concerns, we use lagged values. The 2SLS estimate is unaffected by the inclusion of college attainment, which is not uncorrelated with voting and construction, once we include regional fixed effects. The precrisis share of postsecondary education is also unrelated to subsequent changes in unemployment and voting. Therefore, the 2SLS estimates are similar. Conditional on education, there is still a significant correlation between the component of regional unemployment stemming from construction and voting for nonmainstream parties. The results are similar when we add country group–specific time constants and control for other sectoral shares (online appendix table 9).

The third alternative explanation pertains to a potential link between construction and immigration. The construction sector in richer economies often employs immigrants from low- and middle-income countries. Using data on net migration from Eurostat, we estimate 2SLS models, including an indicator that takes the value of 1 for regions experiencing positive net migration flows (and 0 otherwise). Columns 4 through 6 of table 10 give the results (see also online appendix table 9). Construction appears to be unrelated to net migration, as the 2SLS estimates are unaffected by the inclusion of these controls.[31] We also estimate models controlling for the share of ESS respondents who were born in the country and who are not citizens. Although such data are available only for eight countries, the 2SLS unemployment coefficient retains its economic magnitude and statistical significance (online appendix table 10).

Finally, we examine whether there are precrisis trends in voting for nonmainstream parties and regional sectoral specialization. Precrisis voting for nonmainstream parties (during 2000–07) is unrelated to the share of construction at the onset of the crisis, in 2007–08 (results are not shown for the sake of brevity).

III.C. Unemployment and Brexit

MOTIVATION One of the quintessential examples of the rise of populism in Europe was the U.K. referendum on leaving the European Union. The June 23, 2016, referendum resulted in a majority (52 percent) for leaving the EU. There is no clear definition of pro- and anti-Brexit party alignment, and this vote seems to have transcended party lines. The ruling Conservative

31. The results are similar if we do not transform the net migration data or if we use log migration inflows and outflows (these results are available upon request).

Party split between "Leavers" and "Remainers." The situation was similar, though less stark, in the Labour Party. Although many Labour politicians were active in the Remain campaign, the party's leader, Jeremy Corbin, was lukewarm; eventually, Brexit did well in traditional Labour districts. We thus carry out an analysis of the Brexit vote in an "out-of-sample" fashion. We consider the relationship between the vote in Britain's 379 electoral districts and the change in unemployment before and after the crisis.[32]

ORDINARY LEAST SQUARES ESTIMATES Column 1 of table 11 shows the correlation between the Brexit vote share and unemployment in 2014 (both are expressed in percentage points). The coefficient is marginally significant, and its magnitude is rather moderate. A rise in unemployment of 1 standard deviation (2 percentage points) increases the "leave" vote by 1 percentage point. The share of variation explained by unemployment is small. In column 2, we add dummies for Greater London, Scotland, and Wales (with England being the omitted category). The significance of unemployment increases. The statistically significant (although economically small) relationship between unemployment and the Brexit vote echoes the findings of Becker, Fetzer, and Novy (2017) with respect to the correlates of Brexit.

In columns 3 and 4 of table 11, we report regressions where the independent variable is the difference in the district's unemployment rate averaged over the 2008–14 and 2002–06 periods, respectively (the average increase in unemployment in the U.K. electoral districts was 2 percentage points). The relationship is much stronger for the *change* in unemployment. An increase in the change in unemployment of 1 standard deviation (1 percentage point) results in an increase of 4 to 5.5 percentage points in the Brexit vote. Unemployment performs more strongly in changes than in levels, when we include both variables (results not shown). Figure 6 provides an illustration.

TWO-STAGE LEAST SQUARES ESTIMATES To approximate the causal impact of the change in unemployment during the crisis on the Brexit vote, we instrument the change in unemployment (over 2008–14) with the precrisis share of construction. To reduce noise, we average the share of construction in districts' employment for the period 2005–08 (the results are similar when we use 2007). The construction share ranges from 3 to 15 percent. As shown in columns 5 and 6 of table 11, there is strong first-stage fit; the

32. Recent empirical studies examine the role of various socioeconomic variables, such as unemployment, output, immigration, and dependency on EU funds on Brexit. See, among others, Los and others (2017); Becker, Fetzer, and Novy (2017); Colantone and Stanig (2016); and Arnorsson and Zoega (2016).

Table 11. Regional Unemployment, Crisis-Related Changes in Unemployment, and Brexit[a]

	Vote for Brexit[b,d]				*Change in unemployment*[c,e]	
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Unemployment rate in 2014	0.50*	1.35***				
	(0.30)	(0.23)				
Difference in unemployment rate pre- and postcrisis[f]			5.48***	4.31***		
			(0.45)	(0.43)		
Precrisis construction share in value added, 2005–08					0.16***	0.12***
					(0.03)	(0.03)
Controls[g]	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.01	0.43	0.29	0.53	0.08	0.17
No. of regions	379	379	379	379	370	370
First stage F statistic						

Sources: Eurostat; country-specific electoral archives; Chapel Hill Expert Survey; authors' calculations.

a. See the online appendix for detailed variable sources and definitions. Heteroskedasticity-adjusted standard errors are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. These columns report OLS regression estimates.

c. These columns report 2SLS regression estimates.

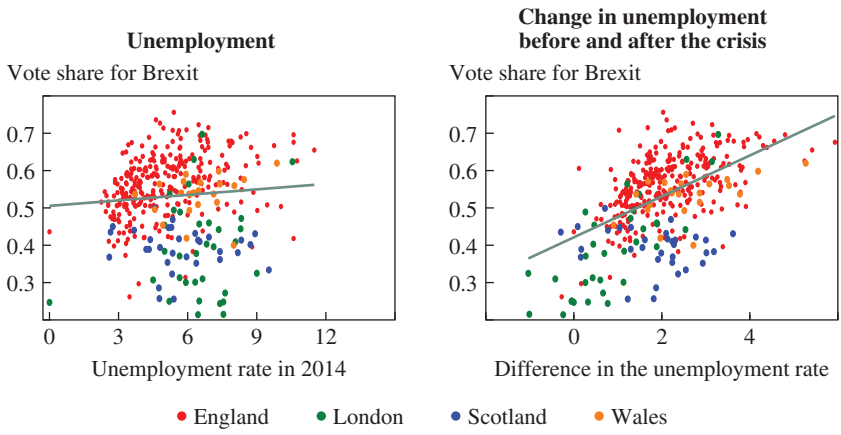
d. The dependent variable in these columns is the share of the population that voted for Brexit.

e. The dependent variable in these columns is the change in the unemployment rate over the period 2008–14.

f. This variable is the difference in the average 2002–06 and 2008–14 unemployment rates.

g. Controls include log population, the male–female ratio, median age, the urbanization rate, the population share of whites, and dummy variables for districts in Greater London, Scotland, and Wales.

Figure 6. Regional Unemployment and Voting for Brexit[a]



Sources: U.K. Office of National Statistics; authors' calculations.

a. The unemployment rate is measured as a percentage.

Vote for Brexit[c,d]					
(7)	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
			15.48***	17.35***	12.00***
			(2.04)	(2.76)	(1.44)
2.44***	2.16***	1.90***			
(0.28)	(0.24)	(0.22)			
No	Yes	No	Yes	No	Yes
0.19	0.52	0.56	–0.69	–0.93	0.41
370	370	370	370	370	370
			32.5	23.3	52.0

precrisis share of construction correlates strongly with subsequent changes in unemployment. A change of 1 standard deviation in the precrisis share of construction (2 percentage points) accounts for a change of between 0.24 and 0.32 percentage point in unemployment (a quarter or a third of its standard deviation). The reduced-form relationship in columns 7 through 9 is also statistically significant. An increase of 2 percentage points in the construction share is associated with an increase of 4 to 5 percentage points in the Brexit vote. Columns 10 through 12 report the 2SLS coefficients. We find a statistically significant relationship between the change in regional unemployment instrumented by the precrisis share of construction and the Brexit vote.

IV. Unemployment, General and Political Trust, and Political Beliefs

In this section, we examine whether the economic and trust crises are related, using data from the European Social Survey.

IV.A. Approach and Specification

We assess the impact of the economic crisis on trust, attitudes, and beliefs, employing two related approaches. First, using all ESS rounds, we estimate panel specifications with regional fixed effects. This is key, given that the literature on the origins of trust—and on culture, more generally—has established the importance of time-invariant or slow-changing local factors, including geography (Alesina, Giuliano, and Nunn 2013; Buggle and Durante 2017) and history (Tabellini 2010). Second, we explore the relationship between changes in trust, attitudes, and beliefs and changes in unemployment, both before and after the crisis. Because many countries recovered from the recessions by 2012, we estimate the difference specifications using two pre- and postcrisis periods: 2008–14 and 2008–12.[33]

IV.B. Ordinary Least Squares Estimates

Table 12 presents OLS panel fixed effects estimates. In the top rows, we include ESS round dummies; and in the bottom rows, we include country group–round fixed effects to account for differential trends across the main European macro regions.[34] Table 13 reports difference specifications with country group dummies that account for differential group-specific time trends.

GENERAL TRUST Columns 1 through 3 of table 12 report the panel estimates with the three measures of interpersonal trust. The coefficients on unemployment are generally statistically significant in the top rows (except for "belief that people are fair"), though they become imprecise when we include country group–round fixed effects. The estimate in the bottom rows of column 1 implies that an increase of 1 percentage point in regional unemployment is associated with a fall in general trust of about 0.11, roughly 1 standard deviation. The within-region association between unemployment and general trust is negative across all country groups, though it is significant only in the Eastern European countries.

33. In the online appendix, we present the graphical before-and-after analysis, using average values for 2010, 2012, and 2014 for the postcrisis period and average values from 2004, 2006, and 2008 for the precrisis period.

34. We have estimated specifications with region fixed effects and country-year fixed effects that account for differential trends on unemployment and trust. There is not much variation on unemployment and beliefs within countries in a given year; thus, in general, this approach yields coefficients that are noisy and much more attenuated.

The before-and-after specifications given in table 13 suggest that unemployment and general trust are only weakly related. The 2008–14 specifications yield significantly negative coefficients, though the coefficients in the 2008–12 specifications are smaller in absolute value and insignificant.

The top panels of figure 7 illustrate the before-and-after correlation between general trust (and whether people are helpful) and unemployment, when we pool postcrisis (2010, 2012, and 2014) and precrisis (2004, 2006, and 2008) observations. The slope is small and statistically indistinguishable from 0, implying the link between regional unemployment and general trust is weak.

TRUST TOWARD POLITICAL INSTITUTIONS Given the relationship between unemployment on voting for antiestablishment parties, we examine its role vis-à-vis trust toward political institutions. Columns 4 through 8 of tables 12 and 13 report the estimates.

Political trust. The panel estimates yield negative and highly significant coefficients, showing a strong link between unemployment and political distrust. The coefficients drop by half when we include country group–round dummies, implying that though a sizable part of the negative association between unemployment and political trust stems from comparing countries in the core with Southern and Eastern Europe, the link is present in all groups of countries. An increase of 5 percentage points in unemployment is associated with a drop of 1.5 percentage points in political trust, a considerable effect, given that the latter's standard deviation is 11 percentage points (table 1). The standardized beta coefficients are about –0.15, twice as large as the corresponding coefficients with the proxies of general interpersonal trust. The specifications in table 13 also yield statistically significant estimates. The spike in unemployment is accompanied by a rise in political distrust. The middle panels of figure 7 give a graphical illustration of the before-and-after patterns in regional unemployment and political trust, when we average the variables over 2010–14 (postcrisis) and over 2004–08 (precrisis). The regression line is steep, and the correlation is present in all groups of countries.

Trust toward the legal system and the police. Column 6 of tables 12 and 13 shows that unemployment is related to distrust toward the legal system. The panel estimate is highly significant. The coefficient falls and loses significance once we add country group–round effects, suggesting that the link is driven by the considerable variability between core and periphery countries. When we estimate models by country groups, we get significantly negative estimates for Eastern and Northern European countries (and

Table 12. Regional Unemployment, Levels of Trust, and Political Beliefs, 2000–14[a]

	General trust (1)	*Belief that people are fair (2)*	*Belief that people are helpful (3)*	*Trust in national parliaments (4)*	*Trust in politicians (5)*
Round fixed effects[b]					
Unemployment rate	–0.1861***	–0.0932	–0.1615***	–0.6851***	–0.5891***
	(0.0662)	(0.0564)	(0.0562)	(0.1472)	(0.1790)
Standardized β	–0.106	–0.057	–0.090	–0.325	–0.293
Adjusted R^2	0.851	0.855	0.849	0.758	0.805
Within R^2	0.0286	0.0086	0.0206	0.1449	0.1465
Group-round fixed effects[c]					
Unemployment rate	–0.1087	–0.1079	–0.0269	–0.3038**	–0.2992***
	(0.0677)	(0.0706)	(0.0735)	(0.1390)	(0.0774)
Standardized β	–0.062	–0.066	–0.015	–0.145	–0.149
Adjusted R^2	0.855	0.854	0.853	0.826	0.861
Within R^2	0.0056	0.0063	0.0003	0.0248	0.0329
No. of countries	24	24	24	24	24
No. of regions	184	184	184	184	184
No. of observations	1,061	1,061	1,061	1,061	1,061

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports OLS fixed effects panel regression estimates. See the online appendix for detailed variable sources and definitions. All specifications include NUTS 2 region fixed effects. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for European Social Survey rounds.

c. Fixed effects are included for group-rounds. Country groups are North, South, East, and Center. Rounds correspond to the European Social Survey rounds.

Table 13. Regional Unemployment, Levels of Trust, and Political Beliefs before and after the Crisis[a]

	General trust (1)	*Belief that people are fair (2)*	*Belief that people are helpful (3)*	*Trust in national parliaments (4)*	*Trust in politicians (5)*
2008–12					
Unemployment rate	–0.0162	0.058	–0.0445	–0.6076*	–0.6919***
	(0.1515)	(0.1170)	(0.2056)	(0.3147)	(0.2393)
Adjusted R^2	0.013	0.002	0.033	0.473	0.475
No. of regions	144	144	144	144	144
No. of countries	19	19	19	19	19
2008–14					
Unemployment rate	–0.2724**	–0.1444	–0.4595**	–0.9467	–0.9266***
	(0.0984)	(0.1460)	(0.1616)	(0.2482)	(0.1941)
Adjusted R^2	0.108	0.044	0.128	0.433	0.377
No. of regions	133	133	133	133	133
No. of countries	16	16	16	16	16

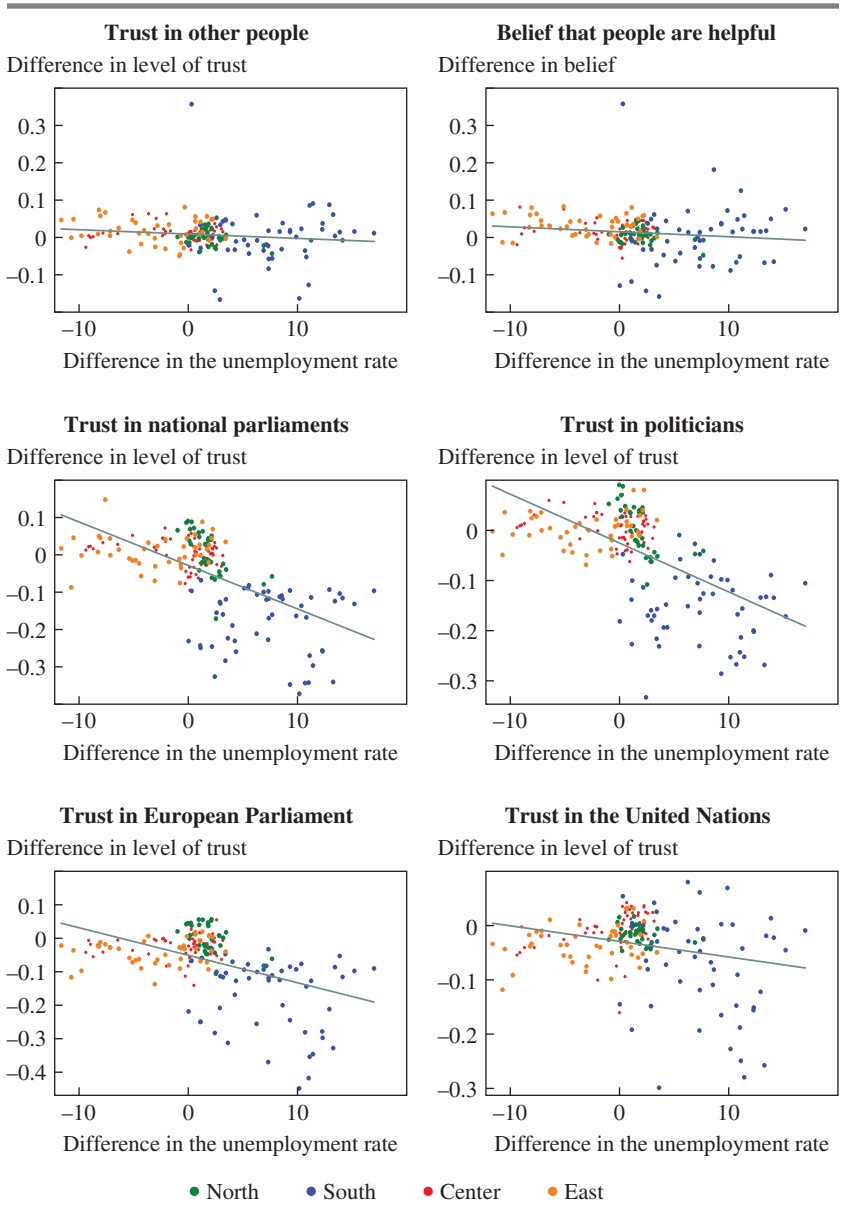
Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports OLS cross-sectional regression estimates. See the online appendix for detailed variable sources and definitions. All specifications include country group fixed effects corresponding to North, South, East, and Center. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

Trust in the legal system (6)	*Trust in police (7)*	*Trust in the European Parliament (8)*	*Trust in the United Nations (9)*	*Satisfaction with democracy (10)*	*Placement on the left–right continuum (11)*	*Feeling close to a particular party (12)*	*Support for further European unification (13)*
–0.4423***	–0.0396	–0.3326***	–0.0228	–0.9480***	–0.0641	–0.4025*	0.0971
(0.0899)	(0.0637)	(0.1117)	(0.0834)	(0.1455)	(0.0828)	(0.1993)	(0.2017)
–0.208	–0.023	–0.246	–0.016	–0.448	–0.064	–0.155	0.061
0.806	0.802	0.453	0.657	0.742	0.652	0.655	0.685
0.0799	0.0011	0.0413	0.0003	0.2324	0.0046	0.0263	0.0054
–0.1114	0.1245	–0.0621	0.0491	–0.5452***	0.1163	–0.4492	–0.1336
(0.1391)	(0.1304)	(0.1571)	(0.1254)	(0.1356)	(0.0702)	(0.2724)	(0.1312)
–0.052	0.073	–0.05	0.03	–0.26	0.12	–0.17	–0.08
0.847	0.819	0.591	0.693	0.809	0.676	0.712	0.736
0.0038	0.0062	0.0011	0.0008	0.0690	0.0088	0.0216	0.0051
24	24	24	24	24	24	24	22
184	184	184	184	184	184	184	156
1,061	1,061	1,061	1,061	1,061	1,061	1,061	717

Trust in the legal system (6)	*Trust in police (7)*	*Trust in the European Parliament (8)*	*Trust in the United Nations (9)*	*Satisfaction with democracy (10)*	*Placement on the left–right continuum (11)*	*Feeling close to a particular party (12)*	*Support for further European unification (13)*
–0.3320*	–0.088	–0.4011**	0.0507	–0.7244*	0.1208	0.2792	–0.1248
(0.1805)	(0.1710)	(0.1589)	(0.1247)	(0.4110)	(0.1905)	(0.4746)	(0.3997)
0.282	0.124	0.306	0.069	0.536	0.067	0.107	0.205
144	144	144	144	144	144	144	144
19	19	19	19	19	19	19	19
–0.1959	0.009	–0.2833*	0.2686	–1.0176***	0.2558***	–0.59	–0.2224
(0.1894)	(0.2419)	(0.1588)	(0.1765)	(0.2162)	(0.0325)	(0.5666)	(0.3142)
0.141	0.048	0.249	0.024	0.53	0.081	0.072	0.162
133	133	133	133	133	133	133	133
16	16	16	16	16	16	16	16

Figure 7. Regional Unemployment and Trust before and after the Crisis[a]



Sources: European Social Survey; Eurostat; authors' calculations.

a.The sample includes 24 European countries at the NUTS 2 level of aggregation. The unemployment rate is measured as a percentage.

positive but insignificant estimates for the Center and the South). In the difference-in-differences specifications, the coefficient on unemployment is negative and significant in the 2008–12 model (144 regions in 19 countries), but is insignificant in the 2008–14 specification (133 regions in 16 countries). Overall, there seems to be a relationship between the severity of the crisis and distrust toward the legal system, though this relationship is less strong than the one for distrust toward politicians. In contrast to the link between the change in unemployment and the change in trust toward the legal system, there is no significant relationship between the intensity of the crisis and trust toward the police. This applies to both the panel and the difference specifications.

TRUST TOWARD THE EUROPEAN UNION In an effort to shed light on the drivers of the relationship between unemployment and Eurosceptic voting, we use the ESS question on trust toward the European Parliament as a proxy for anti-EU sentiment. The ESS also asks Europeans about their trust toward the UN. Because the UN is an institution of global—rather than European—governance, we use trust toward the UN as a placebo.

The panel estimates in column 8 of the top rows of table 12 yield a negative correlation between unemployment and trust toward the European Parliament (coefficient = –0.33). The bottom left panel of figure 7 provides an illustration. In contrast, there is no systematic link between unemployment and trust toward the United Nations, shown in column 9, implying that the estimates given column 8 do capture resentment toward the EU rather than toward all international institutions. When we add the country group–round dummies, the coefficient becomes marginally insignificant, as most of the variation comes from the difference between the main European macro regions. The negative correlation between unemployment and trust toward the European Parliament is strong in the Eastern European countries but is insignificant in the Center and in the South. The difference specifications are similar; changes in trust toward the EU are correlated with changes in regional unemployment. There is no robust correlation between changes in unemployment and changes in trust toward the United Nations (bottom right panel of figure 7).

POLITICAL ATTITUDES We also examine the correlation between unemployment and political attitudes and beliefs.

The specification in column 10 of table 12 shows that regional unemployment correlates strongly with people's dissatisfaction with democracy. The standardized beta coefficient that quantifies the change in satisfaction with democracy to an increase of 1 standard deviation in unemployment is –0.29 (controlling for country group–round fixed effects), almost five

times larger than the respective values for interpersonal trust. This pattern is present in almost all country groups, and it is especially strong in the core and former transition countries. The specifications in column 10 of table 13 reveal a one-to-one link between changes in regional unemployment and changes in satisfaction with democracy. The ESS also asks respondents about their satisfaction with the government, the state of the economy, and their life in general. Regional unemployment correlates strongly with all these variables, and especially dissatisfaction with the economy and with the government. Therefore, the patterns shown in tables 12 and 13 do not necessarily imply that Europeans residing in regions with high unemployment have nondemocratic beliefs. However, there seems to be a metastasis from economic disparity and dissatisfaction with the economy to a more general dissatisfaction with democracy, and with the inability of institutions to protect people against economic risks during the crisis.

We next examine whether unemployment has moved people to the left or to the right on the political spectrum. As shown in column 11 of tables 12 and 13, there is not much evidence of a relationship between unemployment and self-reported left–right political orientation. This applies in both the panel and the difference specifications, and is due to considerable heterogeneity. In some countries, unemployment moves people to the right (for example, Poland, and, to a lesser extent, France and Germany), while in others, unemployment moves voters to the left (for example, Portugal). We also examine related questions, for example, whether respondents support more redistribution or whether they prioritize security, again failing to detect robust patterns (the results are not shown for the sake of brevity).

The specifications in column 12 show that the link between unemployment and distrust reflects a feeling by crisis-hit Europeans that no political party is close to them. This pattern is strong in Central and Northern Europe and in the former transition countries; it is absent from the South, where people seem to align closely to radical-left and far-right parties. The standardized beta coefficient (–0.15) implies an economic effect that is as strong as the one with distrust toward politicians and national parliaments (though more noisy).

We also examine the impact of unemployment on beliefs about European integration, using a question that reads: "Some say European unification should go further. Others say it has already gone too far. . . . What number on the scale [where 10 indicates unification should go further and 0 indicates unification has already gone too far] best describes your position?"

On average, changes in unemployment are related neither to the view that the EU has gone too far nor to attitudes that EU unification should proceed more aggressively. This nonresult masks important heterogeneity. In the South, people hope for *deeper* integration. In contrast, in the North and in the Center, the correlation is negative and significant; in more crisis-hit regions of the European core, respondents believe that the European project has gone too far.

ATTITUDES TOWARD IMMIGRANTS We now examine whether unemployment has affected attitudes toward immigrants. This is important, because "safeguarding" the country from immigration is a crucial element of the populist rhetoric (for example, the Front National in France, the U.K. Independence Party, and Golden Dawn in Greece). Tables 14 and 15 give panel fixed effects and before-and-after specifications for all immigration-related questions.

The panel specifications in columns 1 through 3 of table 14 (top rows) yield weak associations. Interestingly, there is a small "racial bias," given that the unemployment coefficients are larger, in absolute value, for immigrants from different countries than for the majority ethnic or racial group and for non-EU countries. Yet the coefficients are not statistically significant. The specification in column 4 establishes a positive relationship between unemployment and Europeans' views that immigration has a negative impact on the economy. The standardized beta coefficient is large (–0.39). In contrast, there is no association between unemployment and respondents' views on immigrants' role in the country's cultural life (column 5), suggesting that economic—rather than cultural—explanations are at play.

When we add country group–round dummies, the negative correlations between regional unemployment and attitudes toward immigration turn significant. The bottom rows of table 14 further reveal the strong economic insecurity component of anti-immigration sentiment. The unemployment coefficient is negative and highly significant in column 4, when the ESS asks respondents to express their views on immigrants' impact on the economy. Unemployment's correlation with views on immigrants' cultural contribution is close to 0 and is statistically insignificant. A similar pattern emerges from the before-and-after specifications, shown in table 15. Differences in unemployment during the crisis correlate with views that immigration harms the country's economic life, but are unrelated to views on immigrants' role in cultural life. Economic factors seem to fuel support for anti-immigrant parties.

Table 14. Regional Unemployment and Beliefs about Immigration, 2000–14[a]

	Immigrants should be allowed from			*Belief that immigrants*		
	The same race or ethnic group (1)	*A different race or ethnic group* (2)	*Poor non-European countries* (3)	*Are good for the economy* (4)	*Improve cultural life* (5)	*Make the country a better place* (6)
Round fixed effects[b]						
Unemployment rate	–0.1631	–0.2543	–0.2716	–0.5561***	–0.0452	–0.1811*
	(0.1928)	(0.1634)	(0.1929)	(0.0793)	(0.0758)	(0.0908)
Standardized β	–0.089	–0.121	–0.126	–0.390	–0.027	–0.119
Adjusted R^2	0.048	0.082	0.048	0.196	0.049	0.075
Within R^2	0.054	0.088	0.054	0.201	0.055	0.081
Group-round fixed effects[c]						
Unemployment rate	–0.3333*	–0.3807**	–0.4455**	–0.5159***	–0.0544	–0.0965
	(0.1871)	(0.1818)	(0.1893)	–0.1381	–0.0754	–0.1392
Standardized β	–0.181	–0.181	–0.206	–0.362	–0.032	–0.063
Adjusted R^2	0.166	0.195	0.128	0.279	0.079	0.128
Within R^2	0.186	0.214	0.149	0.295	0.101	0.148
No. of countries	24	24	24	24	24	24
No. of regions	186	186	186	186	186	186
No. of observations	1,063	1,063	1,063	1,063	1,063	1,063

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports OLS fixed effects panel regression estimates. See the online appendix for detailed variable sources and definitions. All specifications include NUTS 2 region fixed effects. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for European Social Survey rounds.

c. Fixed effects are included for group-rounds. Country groups are North, South, East, and Center. Rounds correspond to the European Social Survey rounds.

Table 15. Regional Unemployment and Beliefs about Immigration before and after the Crisis[a]

	Immigrants should be allowed from			*Belief that immigrants*		
	The same race or ethnic group (1)	*A different race or ethnic group (2)*	*Poor non-European countries (3)*	*Are good for the economy (4)*	*Improve cultural life (5)*	*Make the country a better place (6)*
2008–12						
Unemployment rate	0.2504	–0.1313	–0.013	–0.2734	0.2646	0.1277
	(0.4226)	(0.3171)	(0.3474)	(0.3528)	(0.3125)	(0.2747)
Adjusted R^2	0.138	0.026	0.016	0.088	–0.012	0.013
No. of regions	144	144	144	144	144	144
No. of countries	19	19	19	19	19	19
2008–14						
Unemployment rate	–0.5250***	–0.5807***	–0.6606***	–0.7660***	0.0235	–0.2437*
	(0.1773)	(0.1483)	(0.1799)	(0.2243)	(0.1743)	(0.1341)
Adjusted R^2	0.364	0.23	0.159	0.273	0.021	0.103
No. of regions	133	133	133	133	133	133
No. of countries	16	16	16	16	16	16

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports OLS cross-sectional regression estimates. See the online appendix for detailed variable sources and definitions. All specifications include country group fixed effects corresponding to North, South, East, and Center. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

Table 16. Regional Unemployment, Levels of Trust, and Political Beliefs, 2000–14[a]

	General trust (1)	*Belief that people are fair* (2)	*Belief that people are helpful* (3)	*Trust in national parliaments* (4)	*Trust in politicians* (5)
Round fixed effects[b]					
Unemployment rate	–0.2413***	–0.1063*	–0.2165***	–1.1459***	–0.9515***
	(0.0894)	(0.0553)	(0.0495)	(0.2963)	(0.2319)
F statistic	24.40	24.40	24.40	24.40	24.40
Group-round fixed effects[c]					
Unemployment rate	–0.1609	–0.1591	–0.0799	–0.7315**	–0.6022**
	(0.1442)	(0.1202)	(0.1208)	(0.3328)	(0.2496)
F statistic	24.09	24.09	24.09	24.09	24.09
Controls	No	No	No	No	No
No. of countries	22	22	22	22	22
No. of observations	979	979	979	979	979

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports 2SLS fixed effects panel regression estimates. See the online appendix for detailed variable sources and definitions. The first stage uses the share of construction in regional value added as an instrument for regional unemployment. All specifications include NUTS 2 region fixed effects. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for European Social Survey rounds.

c. Fixed effects are included for group-rounds. Country groups are North, South, East, and Center. Rounds correspond to the European Social Survey rounds.

IV.C. Two-Stage Least Squares Estimates

To estimate the causal effects of the crisis on trust and beliefs, and to account for endogeneity (related to time-varying omitted variables and measurement error), we run 2SLS specifications, using the share of construction in regional value added as an instrument in the panel specifications and the precrisis share of construction in the difference specifications. Tables 16 and 17 report the 2SLS estimates (see also online appendix tables 12 and 13). For brevity, in online appendix table 11 we report the reduced-form specifications, associating trust and beliefs with construction.

GENERAL TRUST The 2SLS panel estimates yield significant negative coefficients for unemployment on general trust. Interestingly, the estimates are quite similar to OLS, suggesting either that endogeneity is not a major concern or that upward sources of bias cancel with attenuation stemming from classical errors-in-variables. When we add country group–round dummies, the coefficients decline in absolute value and become statistically insignificant. The 2SLS difference specifications are again quite similar to the OLS estimates; the second-stage coefficient on the change in regional

Trust in the legal system (6)	*Trust in police (7)*	*Trust in the European Parliament (8)*	*Trust in the United Nations (9)*	*Satisfaction with democracy (10)*	*Placement on the left–right continuum (11)*	*Feeling close to a particular party (12)*	*Support for further European unification (13)*
–0.6591***	–0.1621	–0.8144**	–0.2306	–1.4509***	–0.1751	–0.8928*	0.1501
(0.1875)	(0.2134)	(0.3387)	(0.1799)	(0.3664)	(0.1091)	(0.5229)	(0.2321)
24.40	24.40	24.40	24.40	24.40	24.40	24.40	52.67
–0.3061	–0.0672	–0.8139**	–0.2803	–1.1902***	–0.0378	–1.4255***	–0.0484
(0.2237)	(0.2409)	(0.3612)	(0.1975)	(0.3622)	(0.1162)	(0.4783)	(0.2351)
24.09	24.09	24.09	24.09	24.09	24.09	24.09	28.98
No	No	No	No	No	No	No	No
22	22	22	22	22	22	22	20
979	979	979	979	979	979	979	659

unemployment is negative, but statistically indistinguishable from 0 in the period 2008–12, while statistically significant in the period 2008–14. Therefore, there is a weak to moderate link between the regional unemployment instrumented by the precrisis structure of the economy and general trust.

TRUST TOWARD POLITICAL INSTITUTIONS The 2SLS specifications linking the share of construction with unemployment and in turn with trust toward politicians or the country's parliament point to a causal link. The 2SLS coefficients are negative and highly statistically significant. The second-stage estimates in the bottom rows of table 16 imply that an increase in regional unemployment of 5 percentage points (roughly 1 standard deviation) is associated with a drop in trust of 3.65 percentage points toward the country's national parliament (roughly a third of a standard deviation). Again, 2SLS coefficients are comparable to the corresponding OLS estimates. The 2SLS panel and difference specifications show that the intensity of the crisis has affected trust toward the legal system. The 2SLS coefficient in the top rows of column 6 of table 16 is negative and statistically significant. The coefficient's magnitude (–0.65) is comparable, though

Table 17. Regional Unemployment, Levels of Trust, and Political Beliefs before and after the Crisis[a]

	General trust (1)	*Belief that people are fair* (2)	*Belief that people are helpful* (3)	*Trust in national parliaments* (4)	*Trust in politicians* (5)
2008–12					
Unemployment rate	–0.2685	0.2171	–0.1482	–1.7279***	–1.9117***
	(0.3249)	(0.3403)	(0.2352)	(0.6705)	(0.6086)
F statistic	31.82	31.82	31.82	31.82	31.82
No. of observations	130	130	130	130	130
No. of countries	17	17	17	17	17
2008–14					
Unemployment rate	–0.6679***	–0.6561***	–0.7960***	–2.1427***	–2.0174***
	(0.1896)	(0.1213)	(0.2427)	(0.6024)	(0.5622)
F statistic	27.09	27.09	27.09	27.09	27.09
No. of observations	119	119	119	119	119
No. of countries	14	14	14	14	14

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports 2SLS cross-sectional regression estimates. See the online appendix for detailed variable sources and definitions. The first stage uses the precrisis share of construction in regional value added as an instrument for the change in regional unemployment. All specifications include country group fixed effects corresponding to North, South, East, and Center. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

larger in absolute value, to the OLS panel specification (–0.44). Once we add country group–period dummies (in the bottom rows), the 2SLS coefficient is –0.30 and statistically insignificant—exactly as in the respective OLS estimation. However, table 17 shows that changes in unemployment (instrumented with the precrisis construction share) play a significant role in trust toward the legal system. In contrast, there is no systematic link between unemployment and the trust toward the police.

TRUST TOWARD THE EUROPEAN UNION In columns 8 and 9 of tables 16 and 17, we examine the link between unemployment and trust toward the European Parliament and the United Nations. The 2SLS coefficient in the panel specifications is negative and highly significant; its magnitude (–0.81) is larger in absolute value than the analogous OLS estimate (which was also more imprecise). A construction-driven increase in regional unemployment of 5 percentage points corresponds to a drop in trust toward the European Parliament of 4 percentage points. In contrast, there is no association with trust toward the UN. The 2SLS difference-in-differences specifications yield similar patterns: a significant relationship between changes in unemployment coming from the precrisis construction share, and distrust toward the

Trust in the legal system (6)	*Trust in police (7)*	*Trust in the European Parliament (8)*	*Trust in the United Nations (9)*	*Satisfaction with democracy (10)*	*Placement on the left–right continuum (11)*	*Feeling close to a particular party (12)*	*Support for further European unification (13)*
–1.2490**	–0.658	–0.8309*	–0.1762	–1.7173**	0.3446	0.3904	0.3637
(0.5344)	(0.4539)	(0.4925)	(0.4433)	(0.8446)	(0.2363)	(0.4409)	(0.8334)
31.82	31.82	31.82	31.82	31.82	31.82	31.82	31.82
130	130	130	130	130	130	130	130
17	17	17	17	17	17	17	17
–1.0658**	–0.5708	–1.7362**	–1.2131**	–1.8365***	0.6541**	–0.9638	–0.4132
(0.4207)	(0.4368)	(0.7267)	(0.5715)	(0.5414)	(0.2581)	(0.7062)	(0.5918)
27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09
119	119	119	119	119	119	119	119
14	14	14	14	14	14	14	14

European Parliament. There is a weak effect on trust toward the UN in the 2SLS difference specifications, but only for the period 2008–14.

POLITICAL VIEWS The 2SLS panel estimates show that unemployment is related to dissatisfaction with the functioning of democracy in the country. The magnitude of coefficients is large. However, we stress that unemployment correlates with dissatisfaction with the government and economic uncertainty and a general feeling of dissatisfaction with life, which in turn are collinear. Hence, it is hard to isolate the impact of unemployment on support for democratic institutions from these related issues. The link between unemployment and political self-orientation is again weak. The panel estimates show that there is a significant second-stage relationship between unemployment (instrumented by the construction share) and a disconnect from the political system (column 12 of table 16). In contrast, the 2SLS coefficient on beliefs that European integration went too far are small and are not statistically significant.

ATTITUDES AND BELIEFS ABOUT IMMIGRATION Tables 18 and 19 report 2SLS panel and before-and-after difference estimates, examining the role of construction-driven swings in unemployment on immigration attitudes.

Table 18. Regional Unemployment and Beliefs about Immigration, 2000–14[a]

	Immigrants should be allowed from			*Belief that immigrants*		
	The same race or ethnic group (1)	*A different race or ethnic group* (2)	*Poor non-European countries* (3)	*Are good for the economy* (4)	*Improve cultural life* (5)	*Make the country a better place* (6)
Round fixed effects[b]						
Unemployment rate	–0.0715	–0.2487	–0.2704	–0.6412***	–0.0849	–0.2252
	(0.2361)	(0.2347)	(0.2746)	(0.1848)	(0.1483)	(0.1481)
Kleibergen–Paap *F* statistic	24.40	24.40	24.40	24.40	24.40	24.40
Group-round fixed effects[c]						
Unemployment rate	–0.2587	–0.3912	–0.5403*	–0.6271**	–0.2409	–0.1443
	(0.3286)	(0.2863)	(0.3017)	(0.3056)	(0.2228)	(0.2140)
Kleibergen–Paap *F* statistic	24.09	24.09	24.09	24.09	24.09	24.09
No. of countries	22	22	22	22	22	22
No. of regions	176	176	176	176	176	176
No. of observations	979	979	979	979	979	979

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports 2SLS fixed effects panel regression estimates. See the online appendix for detailed variable sources and definitions. The first stage uses the share of construction in regional value added as an instrument for regional unemployment. All specifications include NUTS 2 region fixed effects. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

b. Fixed effects are included for European Social Survey rounds.

c. Fixed effects are included for group-rounds. Country groups are North, South, East, and Center. Rounds correspond to the European Social Survey rounds.

Table 19. Regional Unemployment and Beliefs about Immigration before and after the Crisis[a]

	Immigrants should be allowed from			*Belief that immigrants*		
	The same race or ethnic group (1)	*A different race or ethnic group (2)*	*Poor non-European countries (3)*	*Are good for the economy (4)*	*Improve cultural life (5)*	*Make the country a better place (6)*
2008–12						
Unemployment rate	1.1474**	0.1163	0.1941	–0.3464	0.3335	–0.1047
	(0.5244)	(0.6470)	(0.7574)	(0.6385)	(0.6962)	(0.5759)
Kleibergen–Paap *F* statistic	31.82	31.82	31.82	31.82	31.82	31.82
No. of regions	130	130	130	130	130	130
No. of countries	17	17	17	17	17	17
2008–14						
Unemployment rate	–0.6863***	–1.2291***	–1.6126***	–0.9253**	–0.2176	–0.4651*
	(0.2627)	(0.3055)	(0.4993)	(0.3918)	(0.3637)	(0.2635)
Kleibergen–Paap *F* statistic	27.09	27.09	27.09	27.09	27.09	27.09
No. of regions	119	119	119	119	119	119
No. of countries	14	14	14	14	14	14

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports 2SLS cross-sectional regression estimates. See the online appendix for detailed variable sources and definitions. The first stage uses the precrisis share of construction in regional value added as an instrument for the change in regional unemployment. All specifications include country group fixed effects corresponding to North, South, East, and Center. Standard errors clustered by country are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

The 2SLS coefficients are all negative. However, the only robust and statistically significant coefficient in the more efficient panel estimates is on the questions asking Europeans about whether immigration is harmful for the economy. There is no relationship with the perceived impact of immigrants on the country's cultural life. These results emphasize the importance of economic insecurity as the main driver of populism.

IV.D. Heterogeneity

The microstructure of the ESS data set allows for a finer examination of the role of the crisis vis-à-vis trust, attitudes, and beliefs. We explore the heterogeneity of the effect identified above in an attempt to shed light on the underlying mechanisms. The literature has put forward various potential explanations of the rise of populist voting and the decline in political trust. For example, district-level demographics and educational features seem to correlate with political extremism in the United States and the Brexit vote (Autor and others 2016, 2017; Becker, Fetzer, and Novy 2017; Foster and Frieden 2017). To explore heterogeneity, we move from regional means to the individual-level ESS data; we run the specifications above separately for subsamples divided by gender, age, and education.

Table 20 presents panel OLS estimates linking regional unemployment with individual-level responses on general trust (columns 1 through 3), trust toward political institutions (columns 4 through 9), and political beliefs (columns 10 through 13). Table 21 reports panel estimates focusing on attitudes toward immigration. In all these specifications, we include region (NUTS 2) fixed effects and ESS round dummies. The standard errors are adjusted for two-way clustering: at the NUTS 2 level to account for serial correlation, and at the country-year level to account for residual interrelations across all individuals in a given country-round.[35] Running the regressions at the individual level is also useful to assess the robustness of the benchmark OLS panel estimates to the inclusion of respondent-level characteristics. Following Nathan Nunn and Leonard Wantchekon (2011) and Paola Giuliano and Antonio Spilimbergo (2014), we control for age, age squared, gender, education, religion, marital status, and occupation. The top rows of tables 20 and 21 show the results for the full sample that covers more than 100,000 individuals. These serve as the baseline estimates. Not surprisingly, the regressions in the full sample of respondents yield results similar to the regional-level analysis.

35. This adjustment produces larger errors as compared to clustering at the region-year level or only at one dimension.

In the second and third rows of tables 20 and 21, we split the sample by gender. The panel estimates imply no substantial differences. The coefficients are quite similar for men and women in all the questions reported in tables 20 and 21, the exception being the question on political self-orientation. There is some evidence that, in response to rising regional unemployment, women are moving slightly to the left on the political spectrum, a finding consistent with work showing women's higher sensitivity to social issues (Mueller 2003, chap. 23; Miller 2008).

In the fourth, fifth, and sixth rows of tables 20 and 21, we examine heterogeneity with regard to respondents' age, distinguishing between young (below 30 years), middle-age (31–59), and old (60 or older). These account for 14, 52, and 34 percent of the sample, respectively. We do not discover major differences in the impact of regional unemployment on political trust and political beliefs between age categories (table 20). Interestingly, there is heterogeneity on general trust; regional unemployment is unrelated to interpersonal trust in young cohorts, though the correlation is significant for older respondents. Young cohorts' views about immigrants are also not much affected by regional unemployment, a nonresult that deserves future research, as the crisis has affected the young considerably (table 21).

In the last two rows of tables 20 and 21, we distinguish between respondents who did and did not attend college. The correlation between regional unemployment and political distrust is strong for both college and non–college graduates (columns 4 through 9 of table 20). The same applies to political beliefs and attitudes (columns 10 through 13). There is, however, important heterogeneity in general trust (columns 1 through 3). On one hand, the coefficients for the college educated are small and in general are statistically indistinguishable from 0. On the other hand, the coefficient on the non–college graduates sample is much larger in absolute value and is more precisely estimated, pointing out that regional unemployment does contribute to falling trust for the group of unskilled individuals.

IV.E. Taking Stock

Taken together, the OLS and 2SLS results imply that economic factors do not affect general trust as much as trust toward political institutions.[36] This finding is consistent with the argument that general trust has a moral component inherited through education and socialization. In Eric Uslaner's

36. Ananyev and Guriev (2015) find a substantial effect of the Great Recession on general social trust in Russia, a country with underdeveloped political institutions relative to the EU. This result is similar to the one documented by Dustmann and others (2017), who link the ratio of political to interpersonal trust to unemployment.

Table 20. Heterogeneity in Regional Unemployment, Levels of Trust, and Political Beliefs, 2000–14[a]

	General trust (1)	*Belief that people are fair (2)*	*Belief that people are helpful (3)*	*Trust in national parliaments (4)*	*Trust in politicians (5)*	*Trust in the legal system (6)*
Full sample						
Unemployment rate	–0.3017***	–0.1695***	–0.2445**	–0.8303***	–0.6897***	–0.5017***
	(–3.32)	(–2.93)	(–2.49)	(–4.45)	(–4.27)	(–3.80)
No. of observations	101,795	101,371	101,596	99,443	100,332	99,453
Men						
Unemployment rate	–0.3262***	–0.1730***	–0.2652***	–0.8622***	–0.7036***	–0.5722***
	(–3.45)	(–2.93)	(–2.66)	(–4.57)	(–4.32)	(–4.01)
No. of observations	45,767	45,615	45,683	45,134	45,347	45,148
Women						
Unemployment rate	–0.2717***	–0.1636**	–0.2234**	–0.8025***	–0.6736***	–0.4344***
	(–2.91)	(–2.51)	(–2.22)	(–4.35)	(–4.14)	(–3.52)
No. of observations	55,974	55,702	55,859	54,257	54,932	54,254
Age 30 and younger						
Unemployment rate	–0.108	–0.0316	–0.1046	–0.5585**	–0.4491**	–0.4681***
	(–1.20)	(–0.49)	(–1.34)	(–2.49)	(–2.30)	(–2.68)
No. of observations	14,157	14,108	14,130	13,643	13,861	13,840
Age 31–59						
Unemployment rate	–0.2866***	–0.2300***	–0.2750**	–0.8571***	–0.7160***	–0.5114***
	(–3.05)	(–4.70)	(–2.57)	(–4.74)	(–4.40)	(–4.06)
No. of observations	53,042	52,868	52,958	52,147	52,456	52,245
Age 60 and older						
Unemployment rate	–0.4464***	–0.147	–0.2955**	–0.9281***	–0.7828***	–0.5393***
	(–3.77)	(–1.44)	(–2.58)	(–5.02)	(–4.78)	(–3.85)
No. of observations	34,590	34,389	34,502	33,646	34,008	33,361
Attended college						
Unemployment rate	–0.1063	–0.0392	–0.142	–0.7913***	–0.6540***	–0.3819**
	(–1.36)	(–0.54)	(–1.66)	(–4.77)	(–4.24)	(–2.54)
No. of observations	29,116	29,061	29,083	28,754	28,868	28,838
Did not attend college						
Unemployment rate	–0.3578***	–0.2156***	–0.2720**	–0.8375***	–0.6938***	–0.5404***
	(–3.40)	(–3.29)	(–2.44)	(–4.34)	(–4.17)	(–4.23)
No. of observations	72,675	72,306	72,509	70,684	71,459	70,610

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports OLS regression estimates at the individual level. See the online appendix for detailed variable sources and definitions. All specifications include fixed effects for NUTS 2 region, round, sex, marital status, five categories of education, eight categories of religion, and 51 occupations, and controls for age and age squared. Standard errors are clustered by country. *t* statistics are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

Trust in police (7)	*Trust in the European Parliament (8)*	*Trust in the United Nations (9)*	*Satisfaction with democracy (10)*	*Placement on the left–right continuum (11)*	*Feeling close to a particular party (12)*	*Support for further European unification (13)*
–0.1816*	–0.5540***	–0.1414	–0.9713***	–0.0823	–1.1151***	–0.1496
(–1.95)	(–3.74)	(–1.30)	(–5.51)	(–1.07)	(–4.64)	(–0.78)
100,978	90,981	91,188	98,559	89,040	100,182	60,257
–0.2021*	–0.5497***	–0.1156	–0.9949***	–0.0004	–0.9512***	–0.1081
(–1.81)	(–3.72)	(–1.10)	(–5.40)	(–0.00)	(–3.76)	(–0.53)
45,591	42,105	42,586	44,984	41,229	45,151	27,800
–0.1595*	–0.5608***	–0.1697	–0.9471***	–0.1628**	–1.2662***	–0.186
(–1.94)	(–3.70)	(–1.44)	(–5.53)	(–2.07)	(–5.40)	(–0.99)
55,335	48,832	48,557	53,527	47,766	54,979	32,428
–0.1508	–0.4123***	–0.1445	–0.8127***	–0.0672	–0.9671***	–0.0922
(–1.19)	(–2.65)	(–1.11)	(–3.54)	(–0.70)	(–4.50)	(–0.58)
14,085	12,928	13,380	13,736	12,062	13,925	8,492
–0.2253**	–0.5916***	–0.1252	–1.0227***	–0.1164	–1.0193***	–0.1343
(–2.26)	(–3.86)	(–1.12)	(–5.93)	(–1.50)	(–4.08)	(–0.72)
52,725	48,529	48,673	51,909	46,761	52,163	31,774
–0.1515	–0.5696***	–0.1676	–0.9874***	–0.0664	–1.3514***	–0.2271
(–1.59)	(–3.49)	(–1.34)	(–5.67)	(–0.64)	(–4.38)	(–0.92)
34,161	29,517	29,439	32,908	30,210	34,088	19,982
–0.0382	–0.4345**	0.0531	–0.8849***	–0.0272	–1.2097***	–0.2156
(–0.36)	(–2.58)	–0.57	(–4.42)	(–0.40)	(–5.47)	(–1.09)
28,997	27,465	27,788	28,832	27,112	28,718	18,936
–0.2230**	–0.5948***	–0.2018*	–0.9872***	–0.1014	–1.0345***	–0.1342
(–2.22)	(–3.96)	(–1.70)	(–5.74)	(–1.21)	(–4.13)	(–0.70)
71,976	63,513	63,397	69,723	61,922	71,460	41,318

Table 21. Heterogeneity in Regional Unemployment and Beliefs about Immigration, 2000–14[a]

	Immigrants should be allowed from			*Belief that immigrants*		
	The same race or ethnic group (1)	*A different race or ethnic group* (2)	*Poor non-European countries* (3)	*Are good for the economy* (4)	*Improve cultural life* (5)	*Make the country a better place* (6)
Full sample						
Unemployment rate	–0.4796**	–0.4964***	–0.5549***	–0.7343***	–0.1857**	–0.3447***
	(–2.41)	(–3.76)	(–3.72)	(–5.89)	(–2.16)	(–3.71)
No. of observations	98,989	98,817	98,598	97,384	97,200	97,044
Men						
Unemployment rate	–0.4684**	–0.5101***	–0.5644***	–0.8031***	–0.2069**	–0.3601***
	(–2.27)	(–3.49)	(–3.42)	(–6.57)	(–2.40)	(–3.68)
No. of observations	44,741	44,648	44,592	44,460	44,102	44,111
Women						
Unemployment rate	–0.4784**	–0.4704***	–0.5365***	–0.6716***	–0.1608*	–0.3231***
	(–2.38)	(–3.58)	(–3.67)	(–4.89)	(–1.68)	(–3.40)
No. of observations	54,198	54,118	53,956	52,877	53,049	52,886
Age 30 and younger						
Unemployment rate	–0.4732***	–0.3381***	–0.4241***	–0.4723***	–0.0458	–0.1591
	(–2.65)	(–2.71)	(–3.56)	(–5.91)	(–0.53)	(–1.52)
No. of observations	13,886	13,876	13,871	13,738	13,806	13,676

Age 31–59						
Unemployment rate	–0.4659**	–0.5062***	–0.5387***	–0.7449***	–0.1894*	–0.3559***
	(–2.37)	(–3.65)	(–3.41)	(–5.89)	(–1.92)	(–3.45)
No. of observations	51,693	51,635	51,559	51,305	51,258	50,992
Age 60 and older						
Unemployment rate	–0.5576**	–0.6387***	–0.7088***	–0.9369***	–0.3390***	–0.4745***
	(–2.39)	(–4.38)	(–4.08)	(–4.96)	(–2.99)	(–3.74)
No. of observations	33,404	33,300	33,162	32,335	32,131	32,371
Attended college						
Unemployment rate	–0.4260*	–0.3390**	–0.3915**	–0.6105***	–0.0669	–0.2978***
	(–1.93)	(–2.34)	(–2.27)	(–4.62)	(–0.78)	(–2.91)
No. of observations	28,558	28,524	28,480	28,503	28,707	28,368
Did not attend college						
Unemployment rate	–0.4897**	–0.5422***	–0.6056***	–0.7795***	–0.2251**	–0.3671***
	(–2.47)	(–4.00)	(–4.13)	(–5.88)	(–2.34)	(–3.63)
No. of observations	70,427	70,289	70,114	68,876	68,489	68,672

Sources: Eurostat; European Social Survey; authors' calculations.

a. This table reports OLS regression estimates at the individual level. See the online appendix for detailed variable sources and definitions. All specifications include fixed effects for NUTS 2 region, round, sex, marital status, five categories of education, eight categories of religion, and 51 occupations, and controls for age and age squared. Standard errors are clustered by country. *t* statistics are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

(2002, p. 18) formulation, "Moralistic trust is a commandment to treat people *as if* they were trustworthy . . . [and] the belief that others share your fundamental moral values"; people extrapolate from their experiences with specific individuals or from their background to extend trust to groups of people with similar characteristics. In contrast, the European economic crisis has undermined trust toward political institutions at the national and European levels. The fact that we do find a rise in distrust toward national and EU politicians but not toward the police or United Nations suggests that citizens have assigned the blame for the rise in unemployment to the inefficient national and European institutions. The relationship between unemployment and distrust toward the legal system is also alarming, given that an independent, impartial, and well-functioning legal and judicial system is a key pillar of modern capitalist societies and democracies (Hayek 1960), guaranteeing freedom (La Porta and others 2004), and promoting development (La Porta, López-de-Silanes, and Shleifer 2008). These findings connect to the large body of literature studying the interplay between economic growth and democracy.[37] Although the literature mostly compares democracies with nondemocracies, our results from established democracies point out that democracy is at risk if citizens do not believe that it delivers shared prosperity.

Finally, the relationship between unemployment and attitudes toward immigration help shed light on the relative importance of the economic and cultural drivers of populism. The impact of unemployment on attitudes toward immigration is especially strong for voters' economic concerns. The crisis has shifted Europeans' views on the impact of immigrants on the economy, an effect that is especially salient for individuals without a college degree, who are perhaps affected the most by the negative consequences of globalization and technological progress. Another interesting result is that though the younger generations suffer the most from the crisis, their attitudes toward immigrants have not moved much, most likely because of rising cosmopolitanism and open-mindedness.

V. Policy Implications

Our results imply that the loss of confidence in national and European political institutions and the rise of populism are related to the crisis-driven

37. See, for example, Barro (1996, 1997), Persson and Tabellini (2006), Giavazzi and Tabellini (2005), Acemoglu and others (forthcoming), and Papaioannou and Siourounis (2008a) for the effect of democratization on growth; see Barro (1999), Acemoglu and others (2008), and Papaioannou and Siourounis (2008b) for the reverse link between development and democracy.

increase in unemployment. This leads to yet another rationale for countercyclical macroeconomic policies preventing rising unemployment and attenuating its impact. Even a temporary increase in unemployment may result in political fallout, which in turn would give rise to antimarket policies undermining long-term growth. In this case, a large downturn may have sustained negative economic implications.

The Great Recession, coupled with the relative weakness of European institutions and the indecisiveness of policymakers in coping with its severe consequences, led to a dramatic decline in citizens' confidence in political and even legal institutions. The literature on attitudes and preferences finds lasting effects of large economic downturns (Giuliano and Spilimbergo 2014; Malmendier and Nagel 2016); therefore, trust toward the key democratic institutions of modern capitalist economies may well have been permanently damaged.

Our results have policy implications, because they seem vital for restoring confidence in democracy and trust toward institutions, the EU, and national governments. A recent address on the EU's future given by the European Commission's president (Juncker 2017) rightly emphasizes the restoration of trust—however, implementation has yet to follow.

What can be done to restore economic security and political trust? First, the EU should prioritize progrowth investments, such as research, innovation, and public infrastructure to leverage the scale economies and cross-border externalities in Europe. The next Multiannual Financial Framework, starting in 2018–19, goes in this direction by making employment and growth top priorities. Second, national and EU authorities should pursue supply-side reforms of labor, capital, and product markets (Baldwin and Giavazzi 2015), as well as pan-European countercyclical fiscal policies. This will require revamping the EU budget, which remains very small (about 1 percent of the EU's GDP). Third, given unskilled workers' high vulnerability to the crisis, there is a case for targeted support of this population group. Education and training remain mainly the internal responsibilities of the EU's member states, but the European Social Fund and the European Globalization Adjustment Fund should play a role as well.[38]

38. Online appendix figure 2 illustrates the importance of social safety nets in times of crisis; there is a strong positive correlation between the change of trust in the European Parliament before and after the crisis and the change in social benefits per capita. The positive cross-country correlation also holds with trust in national parliaments and satisfaction with democracy. Although this finding stems from cross-country variation (given that there are no comparable region-level data), it opens a new scope for research on public policies to protect trust and democracy in crisis times.

Although the EU needs reforms to improve its economic performance, these reforms in turn can only be carried out if national and European politicians preserve legitimacy and citizens' trust. The loss of trust toward political institutions caused by the recent global financial crisis may result in a vicious cycle of a lack of reforms and continuing stagnation in Europe. The postcrisis recovery of the European economy offers an opportunity to break this cycle. This opportunity should not be missed.

ACKNOWLEDGMENTS We thank Iván Torre, Paul Vertier, Nikita Melnikov, Luis Scott, and Alexander Stepanov for superb research assistance. We are grateful to our editor, James Stock; to Janice Eberly; and to our discussants—Catherine De Vries, Susan Collins, and Francesco Giavazzi—for detailed comments. We also thank George-Marios Angeletos, Olivier Blanchard, Gerald Cohen, Şebnem Kalemli-Özcan, Konstantinos Matakos, Alan Krueger, Giacomo Lemoli, N. Gregory Mankiw, Matthew Notowidigdo, Thomas Philippon, Valerie Ramey, Jay Shambaugh, Joseph Stiglitz, Guido Tabellini, Marco Tabellini, Justin Wolfers, and the other participants in the Fall 2017 Brookings Panel on Economic Activity. We also received useful feedback from seminar participants in the 2016 Conference on Research and Economic Theory and Econometrics, and the 2016 High-Level Expert Group Workshop on Measuring Trust and Social Capital. All errors are our responsibility.

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Comments and Discussion

COMMENT BY

CATHERINE E. DE VRIES Election outcomes in the aftermath of the Great Recession in Europe and beyond seem to demonstrate the rise in electoral support for nonmainstream parties. Electoral upsets like the victory of Syriza in Greece, the Brexit vote in the United Kingdom, the election of Donald Trump as president of the United States, and the entry of the far-right Alternative for Germany into the Bundestag all suggest that political rhetoric critical of mainstream elites and international organizations is becoming popular among a growing segment of the electorate. Although many thought that the process of increasing international cooperation was irreversible, in part because it was expected to lead to a universal acceptance of liberal and capitalist values (Fukuyama 1992), isolationism, nationalism, and protectionism are back on the political scene with a vengeance.

Recent developments in Europe clearly illustrate this. Political parties running on antielite, anti-Europe, or anti-immigration platforms have made considerable political strides in virtually all member states of the European Union. In fact, Eurosceptic parties, which are characterized by either an outright rejection of the European project or a call for its serious reform, had their strongest electoral showing ever in the 2014 elections for the European Parliament (Hobolt and De Vries 2016). The dominant narrative that has emerged in the popular debate is that current developments constitute a *cultural backlash* (Inglehart and Norris 2016; Ford and Goodwin 2017). Liberal elites have stretched their economic, political, and cultural ideas too far. As a reaction, a large segment of the population is demanding a correction. Immigration is often seen as a case in point. Repeated failures of the main parties to respond to public demands for controlled migration have led to deeply polarizing debates over what it means to be, for example,

Austrian, British, Dutch, Greek, Hungarian, Italian, or Polish. Without a doubt, identity politics and cultural divides are important factors of European politics today. But is their effect amplified by the financial crisis?

Historical evidence suggests that economic crises and their aftermaths coincide with increased vote shares for far-right parties (Funke, Schularick, and Trebesch 2016). In a similar vein, the importance of the eurozone crisis is highlighted in this paper by Yann Algan, Sergei Guriev, Elias Papaioannou, and Evgenia Passari. The authors shed important light on the relationship between increases in unemployment, voting for nonmainstream parties, and declines in trust toward national and European institutions. By relying on a wealth of data from 215 regions in 26 European countries, and by combining them with data from the 2016 Brexit vote as well as individual-level survey data from a host of European countries, the authors provide a rich empirical test of the role unemployment plays in the rise of electoral support for antiestablishment parties and the decline in political trust in Europe. The paper suggests that increases in unemployment during the crisis are important drivers of the increased polarization characterizing European politics today. The authors also attempt to make strides in the messy business of untangling what causes what by relying on instrumental variables approaches.

In a nutshell, the paper has three main takeaways. First, by comparing regions that have suffered greatly from the eurozone crisis with those that weathered it fairly well (while controlling for European and country-specific trends), the authors demonstrate that changes in unemployment, rather than levels, correlate strongly with the electoral success of non-mainstream parties. Second, by analyzing the 379 electoral districts in the United Kingdom, the authors show that increases in unemployment, rather than levels, during the financial crisis period are strong predictors of a leave vote in the Brexit referendum. Third, by relying on European Social Survey data, the authors document that increases in regional unemployment coincide with increasing distrust toward national and European institutions, but not toward the police or the United Nations. Moreover, these effects are most pronounced among the non–college educated.

The authors' findings have several important implications. Let me take the opportunity to zoom out and place them in a larger societal context. Especially against the backdrop of Trump's victory, much has been written about the rise of identity politics and the culture wars. Many commentators suggest that many of the current political upheavals focus on a conflict over progressive liberal versus traditional authoritarian values. Although this perspective is no doubt important, this paper provides somewhat of a

correction by highlighting the importance of economic variables. The paper's contribution should perhaps be seen in the context of other recent work in political science and economics highlighting the role of trade or economic dislocation. Yotam Margalit (2011), for example, demonstrates that job loss resulting from foreign competition (especially offshoring) leads to anti-incumbent voting, while David Autor and others (2016, 2017) show that exposure to trade from China increases polarization and Republican vote shares. Related, recent survey evidence from Europe suggests that fears about globalization are a decisive factor for the support of far-left and far-right parties (De Vries and Hoffmann 2016).

The evidence presented in this paper suggesting that economic shocks, accompanied by large increases in unemployment, fuel political polarization also has important policy implications. It suggests that governments are not powerless. Countercyclical fiscal policies, compensation schemes, or supply-side reforms of labor markets might be ways to counterweight some of the crisis effects. In his study from the U.S. context, Margalit (2011), for example, finds that the anti-incumbent effect due to trade-related job losses was smaller in areas where the government provided affected workers with special job training and income assistance. Similarly, Stephanie Rickard (2012) shows that government spending of various sorts can compensate for the diverse economic impact of economic openness. This evidence constitutes an important lesson for Europe. For example, British investments to compensate for losses of economic openness have been rather limited, and this lack of compensation might have played some part in explaining the outcome of the Brexit vote (Rickard 2016). Similarly, the insistence on austerity during the eurozone crisis may have fueled the extremist turn in Europe. Surely, when entire industrial sectors collapse, like construction, or are in deep crisis, like banking, increases in unemployment cannot be avoided. Yet the important question here is whether a different policy response—involving, for example, compensation and countercyclical spending—would have produced different results (Stiglitz 2016).

That said, this type of thought experiment is complicated by the fact that the financial crisis in Europe was accompanied by a refugee crisis. Recent research from Greece suggests that exposure to refugee flows is an important driver of far-right political success (Dinas and others 2017). Within the EU, the issues of free trade and the free movement of people have become largely intertwined. In my book *Euroscepticism and the Future of European Integration*, I show that the recent rise in Euroscepticism and in support for Eurosceptic parties is largely a response to both developments

(De Vries 2018). Moreover, the way people view the EU is intrinsically linked to the national conditions in which they find themselves, as well as their comparison of these conditions with those at the EU level. Euroscepticism and Eurosceptic parties may be on the rise in Europe, but for very different reasons. Skeptics within the Northwestern region demand less intra-EU migration, while others in Southern, Central, and Eastern European member states wish to see more economic investment and employment programs. Euroscepticism is such a diverse phenomenon partly because the financial crisis has exacerbated structural imbalances within the EU, and in consequence has made experiences with the European Union more distinct than ever before. This preference heterogeneity both across and within member states makes a one-size-fits-all approach to addressing Euroscepticism unlikely to be successful (Alesina, Tabellini, and Trebbi 2017).

The financial crisis and its aftermath provide important food for thought for social scientists. In my view, several key topics deserve further attention. The first is the role of supply. To what extent is the degree to which people demand more extreme policy solutions driven by the activities of political parties? Many political scientists suggest that both demand and supply are important. Margit Tavits and Joshua Potter (2015) suggest that left-wing parties strategically place more emphasis on economic issues when inequality rises, for example, while the opposite holds true for right-wing parties. Inequality increases the proportion of the population falling into lower socioeconomic strata, thus expanding the share of voters who could be receptive to the economic message of left-wing parties. As inequality rises, the constituency favoring less market intervention in the economy, as espoused in right-wing party platforms, is likely to shrink, and in response, right-wing parties are likely to shift their emphasis to values. Hector Solaz and I (forthcoming) show that while incumbents generally pay more attention to the economy compared with opposition parties, they shift their attention to values or identity-related matters when economic conditions deteriorate. By doing this, incumbents aim to dodge the responsibility for the state of the economy in the eyes of voters. Research combining both supply and demand effects seems a fruitful way forward. Luigi Guiso and others (2017), for example, show that the key features of the demand for populism as well as the supply heavily depend on turnout incentives. Relating to the supply side, for example, they suggest that populist parties are more likely to emerge and succeed when incumbent parties have difficulties addressing the economic insecurities resulting from a crisis, because disappointed voters abstain.

The second important avenue for future research is the degree to which economic grievances and cultural values interact. One important way forward for the current debate in the social sciences is perhaps to move beyond framing the debate in terms of either economic grievances or cultural values. The values and grievances perspectives need not be mutually exclusive. For example, recent studies suggest that exposure to rising levels of Chinese imports increases self-reported authoritarianism among British voters (Ballard-Rosa and others 2017), or that exposure to economic hardship, such as job loss, leads to a higher demand for socially conservative policies (De Vries, Tavits, and Solaz 2017). This evidence fits the conclusions of the present paper, but it does raise an important question about the mechanism. Why does economic dislocation have these effects? Is it due to a loss of social status or an increase in envy, or something else? This is an important topic for future research.

To wrap up, I believe that this interesting paper sheds important light on the current debate about increasing polarization and extremism in Europe. Although much of the work to date highlights the importance of cultural values, this paper suggests that we should not lose sight of the important role of economic variables. The financial crisis has popularized political rhetoric that is critical of mainstream elites and international organizations in Europe and the United States. Indeed, the existing principles of the liberal world order facilitating economic cooperation through free trade and political cooperation through multilateralism have increasingly come under threat in countries that used to be their vocal supporters. This raises important questions for the future of the European Union, and for international cooperation more generally. Who will lead, and on what terms? Will non-Western powers step in as Europe is preoccupied with Brexit and its aftermath and the United States is looking increasingly inward? The current developments bring home a point made eloquently by Dani Rodrik (2012). Increasing international cooperation represents a "trilemma" for societies: Societies cannot be fully internationally integrated, completely sovereign, and democratically responsive all at the same time. Societies will need to make trade-offs, and much of the current polarization is about varying views about how to make them. It is crucial to study how individuals make these trade-offs, and the way they do will very much depend on their experiences and the way they attribute responsibility for these experiences. Much more work will need to be done, but this paper by Algan, Guriev, Papaioannou, and Passari suggests that unemployment experiences might be an important place to start.

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COMMENT BY

SUSAN M. COLLINS and FRANCESCO GIAVAZZI[1]

This paper by Yann Algan, Sergei Guriev, Elias Papaioannou, and Evgenia Passari examines the economic roots of populism, focusing on the impact of the Great Recession. It asks what drives European voters toward populists: Is it cultural backlash, possibly related to the surge in the inflow of immigrants and refugees; or is it economic insecurity, related to the increase in unemployment since the Great Recession? The authors document a strong relationship between increases in unemployment and the rise in the populist vote. Increased unemployment is also correlated with reduced trust toward national and European political institutions. Conversely, they find little or no effects of unemployment on interpersonal trust and a muted correlation between unemployment and attitudes toward immigrants (especially their cultural impact). This looks like good news—as Europe's economy recovers, the populist appeal should diminish.

The authors analyze the differential impact of the crisis across European regions, showing that this explains the rise of populist parties. Exploiting the cross-region variation allows the authors to control for all the time-invariant

1. We thank Marco Tabellini and Giacomo Lemoli for illuminating discussions. Giacomo Lemoli provided superb research assistance.

features that are shaping the relationship between unemployment and the vote for populists. However, as the authors themselves point out, one cannot rule out the possibility that the correlation might be driven by omitted, time-varying regional factors. This concern is addressed using an instrumental variables approach. The authors perform a large number of convincing checks. One remaining doubt pertains to the potential link between construction and immigration, given that the construction sector in richer economies often employs immigrants from low- and middle-income countries. Using data on net migration from Eurostat, the authors show that construction is unrelated to net migration. These data, however, seem to refer to all individuals entering and exiting a region; and this also includes internal migration, not only immigrants from low- and middle-income countries.

The analysis would benefit from more discussion of the linkages between trust and populism. Clearly, trust toward national and EU institutions cannot be treated as independent factors in any such analysis. As the authors convincingly show, trust (like voting behavior) is highly endogenous and is influenced by economic insecurity. However, they do not take the next step and attempt to deepen understanding of the underlying mechanisms at work. Does greater economic insecurity increase voting for populist (or other nontraditional) parties because it erodes trust toward institutions? This would be an indirect channel. Or is the main effect a direct one (the authors' focus in this paper), or some combination? The authors simply present a parallel analysis of trust and voting, instead of exploring the ways in which they might be jointly determined. This could be a very interesting direction for future work.

Finally, the paper has relatively little to say about the role of voter turnout, even though the literature strongly suggests that who actually votes can be a key explanatory factor for populist voting outcomes. The authors' ordinary least squares results do find a strong negative correlation between unemployment and turnout. But these are hard to interpret because there are endogeneity concerns here as well. Construction shares are also used as an instrument; however, unemployment is insignificant in both the reduced form and the two-stage least squares equations. Perhaps the problem is a weak instrument, or perhaps economic insecurity really has no impact on voter turnout. Although the latter seems unlikely, it would imply a more limited effect of economic insecurity on populist outcomes. Either way, more discussion is warranted here.

EVIDENCE FROM GOOGLE TRENDS In this section, we address the question asked by Algan and his colleagues using a different set of data. The results we present are from a study by Giavazzi and Giacomo Lemoli (ongoing

work) of how refugee inflows and economic conditions have an impact on cultural attitudes and support for populist parties.

Germany is a suitable setting for an exercise of this kind, given the serious refugee crisis it has recently faced and the success of the right-wing populist party Alternative für Deutschland (AfD) in the 2017 federal elections. In addition to detecting a relationship between immigration and attitudes, we are also interested in whether such a relationship changed around September 4, 2015, when Austria and Germany allowed Syrian refugees to cross their borders, after Angela Merkel's famous speech, in which she welcomed them (Smale, Lyman, and Hartocollis 2015). We want to measure the evolution of attitudes about immigration and populism at the same frequency at which we observe refugee flows, while at the same time avoiding the social desirability bias that impairs surveys on socially sensitive topics. Seth Stephens-Davidowitz (2014) highlights the potential relevance of Google searches for overcoming such reporting bias.

We use data on Google searches for "AfD" and related words across German states (German: *Länder*) over the period 2012–16.[2] Google searches are freely available for download from Google Trends, for any country and any period from January 2004 to the present. Within a country, different levels of aggregation are available. For Germany, the possible units of aggregation are states or single cities. We focus on states because, at the city level, data are generally available only for a small number of major cities with very large Internet traffic. For each state, we downloaded the time series of searches from 2012 to 2016. Google does not provide absolute search frequencies, for privacy reasons. What Google Trends returns is an index of the search volume for a given word and a given area and time unit, over the total number of searches in that area and time unit, eliminating repeated searches from the same user. The index is rescaled so that the period with the highest relative search volume during the chosen time span has a value of 100 (Stephens-Davidowitz and Varian 2014).[3] We constructed these indexes at a monthly frequency to match the frequency of data on

2. An analysis of tweets could provide more precise information on attitudes, but at the cost of losing the location information. This would make it impossible to relate attitudes to geographical dispersion of refugees and immigrant inflows.

3. Because absolute volumes are not available, the Google indexes computed for the same word in two different queries (for example, one for Berlin and one for Sachsen) are comparable in trends but not in levels. To make units comparable in levels as well, one needs to download indexes for more geographic units in the same query. Because there is a limit of five geographic units per query, we downloaded indexes for the 16 German states in four different queries, where one state (Berlin) is included in each query.

refugee flows. We then combined the Google indexes with monthly data on asylum applications at the state level. Immigrants arriving in Germany and seeking asylum are allocated to individual states according to the Königstein quotas, a system originally used to allocate federal funds for universities, and which is defined at the beginning of each year as a weighted average of the state's population and tax revenues over the total for Germany. Thus, rather than using actual data on asylum applications across German states, we only exploit variation induced by the allocation rule, by multiplying Königstein quotas by the total number of first-time asylum applications filed in Germany each month.[4] Königstein quotas are almost constant over time; but for all years, we use the quotas for 2012, calculated on values preceding our sample, to avoid endogeneity due to changes over time in population and tax revenues. This allocation criterion is of course not exogenous, but using presample quotas mitigates the degree of endogeneity of asylum applications. These remain partially endogenous because refugees can move across states or delay applying for refugee status.

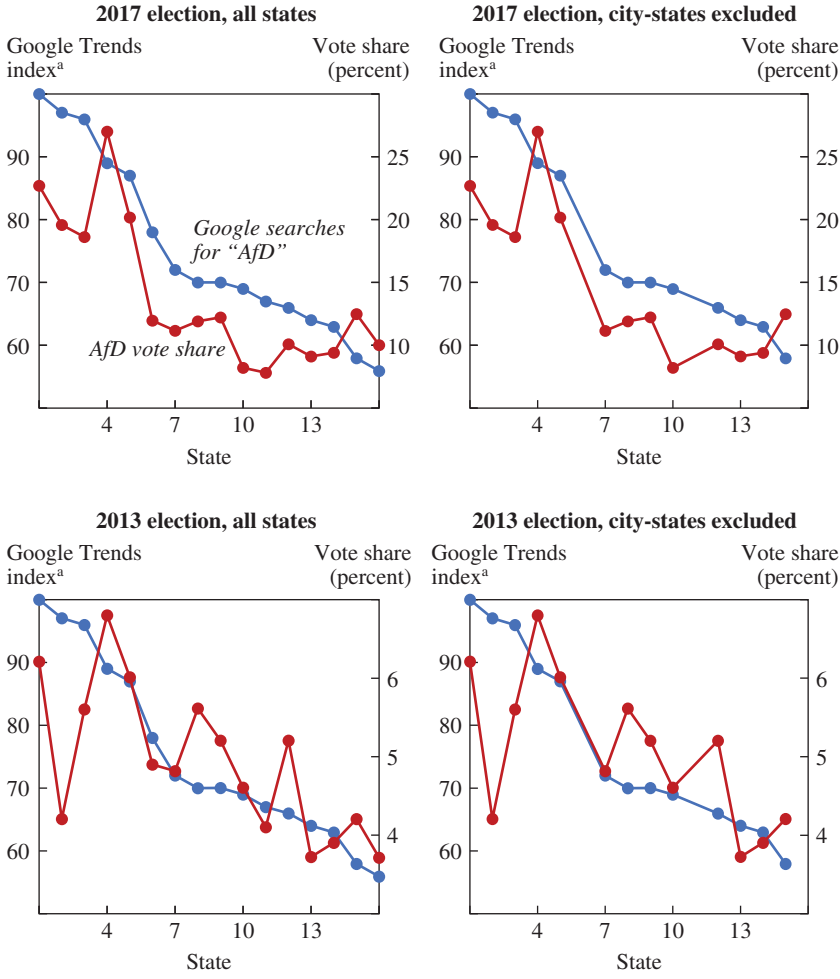
Beyond searches for "AfD," we also downloaded searches for "*Islamisierung*," the German word for "Islamization," a term highly correlated with searches for Pegida, a far-right xenophobic movement. Monthly, state-level unemployment data for the German states were downloaded from the Federal Employment Agency. The idea is to have a state-level indicator of labor market conditions at a monthly frequency. We measure state unemployment in deviations from the German average.

We used the Google searches for AfD as a dependent variable in a panel regression model. The explanatory variables are our measure of "predicted" first-time applicants per 1,000 inhabitants (that is, the aggregate number for Germany multiplied by each state's 2012 Königstein quota), the deviation in the monthly unemployment rate from the German average, an interaction of each of the latter with a dummy corresponding to the months after September 2015 (included), and a set of state-specific trends. Standard errors are clustered at the state level.

Google searches for AfD and related words could reflect, rather than the changing attitudes of German residents, simply a mounting interest in the country's political debate. To validate the Google-based measure as an indicator of political preferences, we first plot aggregate search volumes in German states for 2012–17 and absolute vote shares for AfD in the 2013 and 2017 federal elections (our figure 1). In our figure 2, we exploit Google searches at a weekly frequency to compare total search volume

4. We downloaded the data on overall applications filed in Germany from Eurostat.

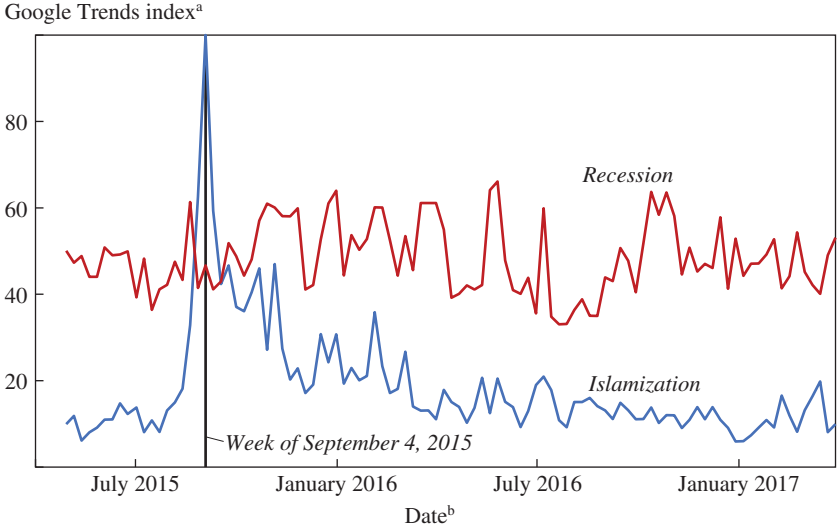
Figure 1. Google Searches for "AfD" and the AfD's Vote Share in the 2013 and 2017 Federal Elections



Sources: Google Trends; German election results.

a. The German state with the highest volume of Google searches is indexed to 100. Search results are aggregated from January 1, 2012, through January 5, 2017.

Figure 2. Google Searches for "Islamization" and "Recession," May 2015–March 2017



Sources: Google Trends.

a. The search results are weekly aggregates. The week with the highest volume of Google searches for "Islamization" is indexed to 100. The actual search terms are *"Rezession"* (recession) and *"Islamisierung"* (Islamization).

b. The ticks mark the first week of each month.

for "Islamization" and "recession" (German: *Rezession*) which is meant to capture concern for general economic conditions. The average search volume for "recession" remains unchanged after September 4, 2015, but searches for "Islamization" peak on the week of September 4 and remain high for the remainder of the year.

Our table 1 shows the results of our estimation for two Google searches: "AfD" and "Islamization." The monthly measure of asylum applications has a positive and significant coefficient on the Google search index for AfD (columns 1 and 2 in the table). The interaction coefficient is not significant. A coefficient of about 20 means—in the case of Berlin, our reference state—that about 3,400 more refugees allocated to Berlin increase the index of Google searches for AfD by 20 percent of the maximum number of searches over our sample period. The effect of unemployment on searches for AfD is not significant. The effect of predicted asylum applicants on searches for Islamization is not significant when taken alone but becomes positive and significant after September 4, 2015, indicating that the relationship

Table 1. Google Searches for Connected Words before and after September 4, 2015[a]

	Google search term			
	AfD *(1)*	*AfD* *(2)*	*Islamisierung* *(3)*	*Islamisierung* *(4)*
First-time asylum applicants per 1,000 × 2012 Königstein quota	21.22*** (2.768)	21.47*** (3.043)	–13.48 (8.098)	–14.89 (9.471)
First-time asylum applicants per 1,000 × 2012 Königstein quota × after September 4, 2015	–7.742 (4.451)	–7.023 (5.758)	16.56** (7.098)	16.84* (8.650)
Deviation in state unemployment from German average	–1.363 (0.946)	–1.365 (1.028)	–0.309 (0.741)	0.465 (0.715)
Deviation in state unemployment from German average × after September 4, 2015	0.611 (0.791)	1.661* (0.812)	–0.042 (0.734)	0.292 (1.112)
After September 4, 2015	9.076*** (2.717)	9.432** (3.448)	1.558 (2.479)	2.522 (3.016)
State-specific trends	Yes	Yes	Yes	Yes
City-states included	Yes	No	Yes	No
No. of observations	960	780	960	780
R^2	0.525	0.528	0.285	0.301

Sources: Google Trends; Eurostat; German election results; authors' calculations.

a. Robust standard errors clustered by state are in parentheses. Statistical significance is indicated at the ***1 percent, **5 percent, and *10 percent levels.

between immigrants and Google searches was higher after the opening of the Austrian–German border, when the refugee crisis mounted. The unemployment variable remains not significant.

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GENERAL DISCUSSION Justin Wolfers was struck by the speed of political cycles in today's environment, and believed having a firm understanding of the link between political trust and the economy was important, especially in light of the Brexit vote and Donald Trump's election in 2016. To this end, he cited a paper he wrote with Betsey Stevenson in which they examine the link between trust in public institutions and the business cycle in the context of the rise of Occupy Wall Street and the Tea Party.[1] For starters, he suggested that the authors read this paper, which looks at changes in unemployment across countries and the corresponding changes in trust in political institutions, using data on roughly half a million people from the Gallup World Poll. These data allow the authors to examine trust in the financial system, which turned out to be the largest influence in the wake of the financial crisis. The authors also examined trends between U.S. states, and found that trust in "big business" declined sharply when a state was in a deep recession, but that trust in bankers, Congress, and corporate executives was procyclical. The only exception they noted was trust in journalists, which rose during periods of high unemployment.

N. Gregory Mankiw agreed with discussant Catherine De Vries's suggestion to explore the role of education and political mistrust, noting that he was motivated by two facts. First, he observed that across regions in the United Kingdom, there was a very strong relationship between the Brexit vote and voters' level of education. Second, he noted that there was a large educational gap between Clinton voters and Trump voters in the 2016 U.S. presidential election, the largest for any U.S. election for which there are data. Clinton won overwhelmingly among the college educated, while Trump won overwhelmingly among the non–college educated. Mankiw put forth two hypotheses for why the less educated voters voted so differently than the more educated ones. First, it may be that recent economic events were harder on the less educated, and that this is part of the story of rising inequality. Second, it is possible that the less educated were simply more likely to be "duped by a charlatan." Evidence of the latter does exist, Mankiw stated, most notably in Bryan Caplan's *The Myth of the Rational Voter*, in which the author documents a host of voters' biases, which tend to be larger for the less educated.[2]

1. Betsey Stevenson and Justin Wolfers, "Trust in Political Institutions over the Business Cycle," *American Economic Review* 101, no. 3 (2011): 281–87.

2. Bryan Caplan, *The Myth of the Rational Voter: Why Democracies Choose Bad Policies* (Princeton University Press, 2007).

Valerie Ramey echoed concerns raised by the two discussants over the instrument used in the paper—specifically, the share of employment in construction as an instrument for regional unemployment as a whole. She wondered if construction employment might be correlated with the number of immigrants coming into an area, due to the resulting increase in demand for new housing.

Şebnem Kalemli-Özcan suggested that the heterogeneity and instrument issues might come down to determining whether the variable is actually picking up *unemployment* or something else. She suggested that the authors consider using data at the NUTS 4 level, which is at a lower aggregation than the NUTS 2 data presently used.[3] Though it would not be possible to measure unemployment using NUTS 4 data, this concern could be mitigated by aggregating individual data to the NUTS 4 level and using NUTS 2 time fixed effects. Such a strategy would allow the authors to absorb all regional variations, which would control for factors such as construction and education. She also emphasized the importance of omitting agricultural subsidies as a variable, noting that in Europe, at the NUTS 2 level, the variable is strongly correlated with voting. Conversely, construction is financed with bank credit, as opposed to agricultural subsidies, which are distributed at the regional level.

Thomas Philippon wondered if there was something special about the European Union or eurozone that might hamper generalizing the authors' findings. Financial crises occur in many places other than Europe, and they almost always lead to more populist voting behavior, a phenomenon that is not new or specific to Europe. He found the distinction between local and EU-level institutions interesting, but wondered how the results would compare with those in the United States. As an example, suppose there is a 1 percentage point increase in unemployment in a U.S. state: By how much would trust in state and federal government officials change? How large would this change be, relative to the same increase in unemployment in Spain? Philippon suspected that the signs of the effects would be the same, but he was unsure of their relative magnitudes. He suggested that the authors take a careful look at Iceland, because it presents an extreme case of economic shock and offers a different link with the rest of the European Union.

3. NUTS stands for *nomenclature des unités territoriales statistiques*, or nomenclature of territorial units for statistics.

Jón Steinsson wondered about the dynamics of trust and the support for populism. He noted that because unemployment is falling, it is possible that the whole populist episode may also be on the decline. However, he was worried that there might be hysteresis in the dynamics, noting that, even with the U.S. unemployment rate currently at historic lows, we may not be "out of the woods" yet.

Matthew Notowidigdo wondered if there was any evidence of the *outcomes* of the populist parties gaining support. For example, does the rise of populism have any policy implications, or is it just symbolic? He then turned to the issue of immigration, citing work by David Card, Christian Dustmann, and Ian Preston that examines the role of immigration, wages, and what they call "compositional amenities."[4] In that paper, the authors show that people care more about who is around them as opposed to the economic impact of immigrants. Notowidigdo wondered where the literature stands regarding the relative importance of cultural versus economic factors when it comes to understanding why people care about immigration.

Alan Krueger expanded on comments raised by Susan Collins about the role of age. Krueger noted that while young British people were hit hardest in employment prospects, they were more likely to want the United Kingdom to stay in the European Union. This same observation could be made vis-à-vis the United States, whereby younger voters were more likely to vote for the establishment candidate Clinton over the populist candidate Trump. He suggested that the relationship between economic prospects and populism might be more complicated than what the aggregate results suggest.

Jay Shambaugh wondered if voters really supported the extreme candidates or if they simply ran out of other choices. He noted that with large coalitions, everyone in power is tainted during a crisis, which may cause voters to look elsewhere. According to Shambaugh, by 2014, in some countries all the mainstream European political parties supported austerity policies, which may have caused people to reach out to extremists. He suggested that the authors look into the number of mainstream parties and the size of their coalitions to identify whether people are simply looking for something different. However, he cautioned that there might be endogeneity issues,

4. David Card, Christian Dustmann, and Ian Preston, "Immigration, Wages, and Compositional Amenities," *Journal of the European Economic Association* 10, no. 1 (2012): 78–119.

because if economic conditions are bad enough, the government may turn over so fast that voters run out of all the "good" choices.

Gerald Cohen echoed comments by Steinsson and Shambaugh regarding timing. He wondered why it took so long for the populist parties to rise, and questioned if there really was an interaction between the length and timing of unemployment. He suggested that an *initial* spike in unemployment could play a role, citing the rise in populist parties coupled with the relatively quick rise in unemployment in Greece and Italy.

Elias Papaioannou first stated that the authors would refer to the paper by Stevenson and Wolfers, and assured Wolfers that they would cite it in the revised draft. He noted, however, that the European Social Survey unfortunately does not ask about voters' opinions of bankers or other professionals, and that the Gallup data used by Stevenson and Wolfers are not available at the desirable level of aggregation presently used. Relatedly, he noted that the European Social Survey data are not available at the village level, and as a result the authors could not move to the superfine level suggested by Kalemli-Özcan. However, he noted that the revised draft would include voting data at the NUTS 3 level.

Papaioannou acknowledged that Philippon raised a good point regarding the European Union's uniqueness. The EU experienced a relatively large shock, and Papaioannou hypothesized that the effect might be smaller if he and his colleagues were to study the more mild recession in the United States during the early 2000s. He agreed with Philippon that analyzing more countries would be helpful, but reiterated that the paper was meant to fill a gap in the literature with respect to *Europe*, and expressed hesitation about moving too far beyond its borders.

Responding to comments by Mankiw and others about issues of heterogeneity, Papaioannou admitted that he and his coauthors tried to mitigate some of the issues that were identified. He noted that there seems to be a stronger correlation between unemployment and distrust among non–college educated cohorts, but that there did not appear to be a meaningful shift for young cohorts with regard to cultural beliefs. He stated that the purpose of the present paper was not to nail down the importance of culture versus economics; rather, it shows that economics is part of the explanation for the rise in populism. He viewed the present paper as a contribution to a larger body of work—such as, among others, the paper by Luigi Guiso and others on the supply of and demand for populism; that by Dustmann and others, on Europe's trust deficit; that by Alberto Alesina, Guido Tabellini, and Francesco Trebbi, which argues that national elections are more relevant

than European Parliament elections; and that by Guiso, Helios Herrera, and Massimo Morelli, on cultural differences and institutional integration.[5]

On Ramey's point about the proper instrument and attributing causation, Papaioannou recognized that the story in the present paper is incomplete because it does not include a random experiment. He noted that he and his colleagues were constrained by the data, and by the fact that they tried to control for education and other factors. However, he argued that even the reduced form estimate between the share of construction and subsequent changes in voting for extremist parties and distrust is interesting—especially because in many countries, the construction sector experienced an acceleration before the crisis.

Finally, on the issue of dynamics—brought up by Steinsson, Notowidigdo, and others—Papaioannou noted that it would be hard to identify them because he and his colleagues do not have data from after 2014. However, he was interested in identifying whether the effects were persistent over time or if they would fade away quickly.

5. Luigi Guiso, Helios Herrera, Massimo Morelli, and Tommaso Sonno, "Populism: Demand and Supply," working paper (2017), http://www.heliosherrera.com/populism.pdf; Christian Dustmann, Barry Eichengreen, Sabastian Otten, André Sapir, Guido Tabellini, and Gylfi Zoega, *Europe's Trust Deficit: Causes and Remedies* (London: CEPR Press, 2017); Alberto Alesina, Guido Tabellini, and Francesco Trebbi, "Is Europe an Optimal Political Area?" *Brookings Papers on Economic Activity*, Spring 2017: 169–213; Luigi Guiso, Helios Herrera, and Massimo Morelli, "Cultural Differences and Institutional Integration," *Journal of International Economics* 99, suppl. 1 (2016): S97–S113.