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Population Aging and the Rise of Populist Attitudes in Europe

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Abstract

In light of the rise in populism in Europe, this paper empirically explores the interplay between population aging and populist attitudes. We test this hypothesis by conducting a multilevel analysis of individuals living in European countries over the period 2002-2019. Our measure of population aging is the country's old-age dependency ratio, thus we focus on population or societal aging as opposed to individual aging. Populist attitudes are derived from individual-level data that provide information about voting for populist parties, political trust, and attitudes towards immigration available in nine consecutive rounds of the European Social Survey. Our findings suggest that societal aging is associated with a fall in trust in national and European institutions and a rise in attitudes against immigrants. There are two potential mechanisms driving our results. First, a shift in the median voter age. Older people tend to be more conservative, voting more for right-wing populist parties and this is reflected on the median vote and attitude as well. The second mechanism appeals to the impact that the presence of the ``old'' group in the society has on the society and the economy as a whole, it is thus more of an ``externality'' effect.

Living in an aging society, young people are aware of the fact that they have to cater for a large share of old people and this gives rise to different incentives and attitudes compared to individuals living in ``young'' societies.

JEL Classification: D72, J10, P16, Z13

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1. INTRODUCTION

Recently, European countries have seen an unprecedented rise of populist parties which successfully entered the European parliament. As partly the result of the rise in populist attitudes, the European Union faced the exit of United Kingdom, known as "Brexit". Other European countries elected governments that reinforce the rise of anti-immigrant and even anti-EU attitudes.

Yet, the rise in populism is just one of the problems that Europe has to deal with. Another pressing concern is population aging, i.e., the fact that the proportion of people of working age is shrinking while the relative number of those retired is expanding. This phenomenon already puts pressure on public pension schemes, transfers the burden to the diminishing working age population and shifts government spending to less productive categories.

The profile of the supporters of Brexit, hints to the fact that the two phenomena are linked. In the light of the above we view the link between the two phenomena as evident and unavoidable, i.e., the interplay between population aging and populist attitudes. We already know that individual aging is associated with lower levels of trust and the adoption of more conservative attitudes. What we explore now however, is what happens at the societal level when the aging individuals become a dominating group. Where does this lead societies to? Does the median voter, who unavoidably becomes older and older drive the rise for populist attitudes? Does the rest of the society, observing this increasing share of old people, behave in a different way when it comes to their economic decisions? Individuals raised in smaller families know that they need to exert more effort and time to cater for their parents, as they know that the same holds at the societal level, i.e, that fewer workers have to cater for more older people.

Our study suggests that the answer to the above questions is positive. Our findings illustrate that in countries with a high OADR (number of people above the age of 65 "the old individuals" per 100 people of the working population aged 15-64.), individuals: i) are more likely not to participate in elections; but ii) when they do so, they are more likely to vote for a populist party. A 1 unit increase in the old dependency ratio (OADR) is associated with a decline of 0.05 percentage point in the probability to vote in last national elections and with a 0.17 percentage point rise in the probability of voting for a populist party. Concerning political trust, individuals who live in countries with a high OADR tend to mistrust parties, politicians, parliament and EU institutions. Concerning anti-immigrant attitudes, higher societal aging is associated with a rise in favoring anti-immigrant beliefs such as that immigrants make host countries worse, undermine the host country's culture, are bad for the host country's economy and last, immigrants take out more than they put in the host country's economy.

More concretely, a 10% increase in OADR is associated with a 5% increase in voting participation and a 17% increase in voting for a populist party. Additionally, we find that in countries with a high OADR, individuals are more conservative, voting for right-wing populist parties and being more right-wing oriented. As a result, this conservatism leads individuals to be more prone to vote for populist parties in Europe. Our analysis is motivated

by Becker et al. (2017), who discussed among other determinants the role that individual age played on Brexit, and we seek to shed light to the dimension of population aging on the rise of populist attitudes in Europe, i.e., the impact of the old-age dependency ratio (OADR) on voting behavior e.g., participation in elections, voting for populist parties, right-wing and left-wing populist parties, political trust and attitudes towards immigrants.

Analytically, we use data from the nine consecutive rounds of the European Social Survey (ESS) from 2002 to 2019 and we associate each individual to the aggregate old-age dependency ratio of the country where he/she is born and lives in (on top of accounting for his/her age). As such, we capture not only the individual age effect but also the societal aging effect, as an aggregate phenomenon, that is shaping modern day societies.

The OADR variable is derived from the World Bank Development Indicators (WDI). Beyond our main explanatory variable we include additional individual controls that have been argued to affect voting behavior (e.g., the education status, gender, age, marital status, race, life satisfaction and the individual's feeling about his/her health as in Becker et al. (2017)). We also control for economic factors that also drive populist attitudes (e.g., the economic insecurity of individuals through the individuals' income source, whether individuals experienced income difficulties and whether individuals are working as low-skill workers in the manufacturing) according to Guiso et al. (2020). Last, we control for a wide range of country characteristics that capture the overall societal dynamics beyond population aging, such as GDP per capita in PPP, fertility rate, mortality rate, life expectancy and unemployment, the share of GDP which is related to country's imports and exports and the level of current health expenditure expressed as a percentage of GDP. Last, we use country and ESS round fixed effects that account for much of the unobservable heterogeneity.

Our findings remain significant and robust to various specifications such as the use of an alternative measure of the old-age dependency ratio (OADR) (i.e., we define now the new OADR as the number of people above the age of 65 as a fraction of the total population); the restriction of the sample to populist countries (i.e., we keep only countries where individuals voted for at least one populist party as in Guiso et al. (2020)) in order to see whether our results are driven mainly by the populist countries; to individuals holding the citizenship of the country of residence; and last, we replicate our benchmark specification to EU countries as the rise of populist attitudes is more prominent to countries participate in EU.

To account for even more unobservables (though this restricts the variation we exploit in our analysis), we conduct a regional analysis, in Nuts 1 European regions. This allows for the inclusion of a large number of unobservables and helps to eliminate unobserved heterogeneity at the regional level. To anticipate the findings, in all our robustness exercises, the aging of the European population measured by the rise in the OADR, yields a positive effect on populist-related outcomes, and this effect is even stronger in terms of magnitude.

In the discussion part, in order to investigate whether the effect of societal population aging on populist behavior is driven by a specific age group, we restrict our sample to old individuals who are above 65 years of age and to young individuals below the age of 64. Interestingly, we find that both the young and the old age groups contribute equally to the effect of population aging on individuals' populist attitudes.

The structure of the paper is organized as follows. Section 2 discusses the existing literature and Section 3 introduces the data and the empirical strategy. Section 4 presents the benchmark results. Section 5 conducts robustness exercises. Section 6 lays out the discussion whereas Section 7 concludes.

2. RELATED LITERATURE

In recent years, we have observed a rise in the votes of populist parties which successfully entered the European parliament and created a new equilibrium for the society and the EU as a whole. Manifestations of the upsurge in populism include the British vote in the June 2016 referendum in favor of a "Brexit" from the European Union; the December 2016 vote in the Italian referendum to reject constitutional reform and, with it, to effectively oust a solidly pro-EU government; the 2015 election of a populist authoritarian government in Poland that interferes with the judicial system and the educational curriculum in public schools; the consolidation of power by the government of Viktor Orban in Hungary, a government that has weakened the courts and the press while attacking immigrants, Jews, homosexuals, and European bureaucrats; the unprecedented popularity in France of Marine Le Pen's anti-immigrant National Front party in the run-up to the country's presidential election of 2017 (Gusterson, 2017) and also the high percentage of Marine Le Pen's party in the presidential election of April 2022.

The determinants of populism have been widely studied in the related literature. As suggested in Algan et al. (2017) many Europeans appear dissatisfied with local and EU politicians and institutions. Likewise, Dustmann et al. (2017) report that after the crisis mistrust of European institutions, largely explained by the poorer economic conditions of the Euro-area countries, is correlated with voting for populist parties. Acemoglu et al. (2013), Rodrik (2018) and Di Tella and Rotemberg (2018), as well as Guiso et al. (2020) provide a discussion on the recent rise of populist parties in the light of economic theory. Guiso et al. (2020) and Guiso et al. (2021) document a link between individual-level economic insecurity and populist attitudes. The hint to economic insecurity and the exposure to a more globalized environment in their workplace as the main determinants behind it. Likewise, Guiso et al. (2019) find a greater success of populist parties in response to the financial crises and globalization shocks in Eurozone (EZ) countries. This is consistent with voters' frustration for the greater inability of the EZ governments to react to difficult-to-manage globalization shocks and financial crises. It is also argued that a slow, staged process of political unification can expose the European Union to a risk of political backlash if hard to manage shocks hit the economies during the integration process. In a recent comprehensive overview, Guriev and Papaioannou (2020) analysed the political economy of populism. In addition, Boeri et al. (2023) argue that improving individuals' knowledge about the functioning of pay-as- you-go pension systems and demographic trends can change natives' attitudes towards migrants. They also find that participants who do not support populist and anti-immigrant parties display more positive attitudes towards migrants when knowledge of pension systems and demographic trends is increasing.

A strand of the existing literature primarily focuses on the role of individual aging and other demographic factors on populist vote. Becker et al. (2017) analyze the Brexit vote shares across UK voting areas, using a wide range of explanatory variables. They show that the Leave vote shares are systematically correlated with older age, lower educational attainment, unemployment, or employment in certain industries such as manufacturing, as well as with a lack of quality of pub- lic service provision. Ferree et al. (2014) provide an extensive review of academic works which link voting patterns to demographic, economic and political features. Voters' behavior has also been shown to be strongly associated with individual scepticism towards institutions (e.g. Euroscepti- cism) or intolerance against foreigners (Whitaker and Lynch (2011); Clarke and Whittaker (2016) and Arzheimer (2009)). Additional studies claim that ethnic minorities may engage in "ethnic" or "policy" voting depending on the issue

they are called to vote upon (Bratton and Kimenyi (2008) and Tolbert and Hero (1996)). Polarization has also been related to immigration (Barone et al., 2014) as well as trade integration (Dippel et al. (2015) and Burgoon (2013)).

Last, anecdotal evidence coming from the media support the hypothesis that older people are more prone to vote for populist parties and they do not trust the political institutions is abundant. This had already become evident by the British vote in the June 2016 referendum in favor of a "Brexit" from the European Union. More specifically, taking into account the polls, just over 70% of 18 to 24-year-old voted in the referendum in favor of Remain in the EU and just under 30% backing Leave. In contrast, only 40% of those aged 65 and over supported Remain, while 60% placed their cross against Leave (Helm, 2016). A total of 82% of 18 to 24-year-old with a votingpreference say they would vote Remain in a second referendum, an average of polls conducted in the past three months suggests, while only 18% of this age group say they would vote Leave. In contrast, two-thirds of those aged65 and over would back Leave, while only one-third would favour Remain (Curtice, 2018).

Overall, our paper contributes to uncovering an aggregate demographic factor in the rise of populism, i.e., that of population aging. The literature has so far extensively discussed how people behave as they grow older themselves. What needs to be further understood is also how societies behave as they grow older. Many old people together constitute an old society. This fact not only implies that each of those people is likely to manifest populist attitudes, but also gives rise to aggregate dynamics reflected in e.g., the voting behavior of the median voter; the tactics of the parties that appeal to collective memory and past shocks offering a nostalgic and sometimes reinvented vision of the past; the rise of scaremongering in public discourse that is particularly appealing in older audiences.

3. DATA AND EMPIRICAL STRATEGY

3.1 DATA

To explore the effect of aging population on populist attitudes, we employ data from the nine con- secutive rounds of the European Social Survey (2002-2019), a repeated cross-section survey that quantifies the attitudes, beliefs and behavioral patterns of citizens in 34 European countries. The sample comprises individuals from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Germany, Finland, France, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kosovo, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Russia, Sweden, Switzerland, Slovenia, Slovakia, Spain, Switzerland, Turkey, United Kingdom and Ukraine. The ESS contains a rich set of questions that capture populist attitudes as well as personal character- istics such as country and year of birth, gender, age, race, individual's income, education, political orientation, employment, marital and health status, etc.

In our analysis we employ three proxies for populist attitudes as in Guiso et al. (2020) and Guiso et al. (2021). These are i) voting behavior; ii) aspects of trust; and iii) immigrant-related attitudes. In the benchmark specification, we rely on voting behavior. The ESS provides us with information on whether people participated in the last national elections and which party they voted for, thus we construct a dummy that takes the value 1 if the individualvoted for a populist party and 0 otherwise. Similarly, expanding our analysis we explore also, the effect of an agingpopulation on political trust and attitudes towards immigrants. Concerning trust, we use variables for trust in i)

parties; ii) country's parliament; iii) politicians; and iv) European parliament, all measured on a scale between 0 (no trust) and 10 (full trust). Last, we capture attitudes e.g., i) whether people believe that immigrants make host country worse or not, ii) immigrants undermine or enrich the country's culture, iii) immigrants are bad or good for the country's economy and finally, v) immigrants take out more than they put in host country's economy. We use the political trust and the anti-immigrant attitudes as additional proxies for populism following Guiso et al. (2020) and Guiso et al. (2021) as the loss of confidence in political institutions and the existence of anti-immigrant attitudes can lead voters to vote for populist parties in national elections.

Our key explanatory variable is the country's old-age dependency ratio (OADR) which we interpret as the proxy for population aging. We extract data from the World Bank Development Indicators (WDI) for annual estimates of old-age dependency ratio since 1960. The OADR states the number of people above the age of 65 "the old individuals" per 100 people of the working population aged 15-64. Thus, we aggregate the WDI data over 2-year intervals in order to match with the ESS.

Beyond our main explanatory variable our analysis controls for a wide range of individual characteristics coming from the ESS following Becker et al. (2017) that have been argued to affect voting behavior i.e., the education level, gender, age, marital status, race, life satisfaction and the individual's feeling about his/her health. Individuals who are more educated and satisfied with their life and health status are less prone to vote for populist parties. Moreover, it is argued that race plays an important role for voting for populist parties as the typical voter of far-right wing parties is white and he/she belongs to the middle class (Ashcroft and Bevir (2016)). Marital status or living with children may also impact an individual's voting behavior. Last, we also control for gender and the individual's age; older individuals are shown to display more anti- immigrant attitudes and a lower political trust. Additionally, we control for economic factors that drive individuals to vote for populist parties such as the economic insecurity of individuals through i) which is the main source of income in individuals' households, ii) whether the individual has experienced any income difficulties, e.g., whether the voter lives comfortably with the present income or find it difficult and last, iii) whether the voter is exposed to globalization working as a low-skill worker in the manufacturing (Guiso et al. (2019); Guiso et al. (2020)). We control additionally for individual's economic insecurity because it either may be produced by the economic crisis that hit countries or may also be produced by labor market competition due to immigration. Thus, as people age experience more and more macroeconomic shocks which leads to a decline on the political trust and more hostile attitudes. The remaining controls that capture the aggregate dynamics beyond population aging are coming from the World Development Indicators (WDI) and we include country characteristics such as GDP per capita in PPP, fertility and mortality rates, life expectancy and unemployment. We also control for the share of GDP which is related to the country's imports and exports and the level of current health expenditure expressed as a percentage of GDP (Becker et al., 2017). All these variables are considered as the determinants of trust and attitudes towards immigrants that can capture the stage of development, other demographic factors as well as socioeconomic determinants.

Table 1 documents the descriptive statistics of all the variables explained above and used in our analysis.

[INSERT TABLE 1 HERE]

In Figure A.1 we illustrate the evolution of population aging measured by the old-age de- pendency ratio in European countries as well as the share of populist parties' votes in European countries. More specifically, it can be seen that in Europe the old-age dependency ratio is ris- ing during the years as many European countries have been hit by macroeconomic shocks which are related with lower fertility rates (Kana et al. (2017) and Reynaud and

Miccoli (2019)) as individuals remain unemployed and experience severe economic difficulties (Comolli and Vignoli (2021)). However, Luxembourg has currently the lowest old-age dependency ratio in the EU as it has benefitted from strong net migration flows in recent years.

[INSERT FIGURE A.1 HERE]

Figure A.2 illustrates the vote shares of populist parties for the European countries where individuals voted at least one populist party. Evidently, in the ESS there are countries e.g., Luxembourg, Portugal where there are not reported individuals who have voted for a populist party and other countries such as Ukraine for which we do not have relevant information from the ESS. Figure A.3 illustrates the degree of trust in political institutions (e.g., trust in political parties, parliament and politicians and EU parliament) for each European country excluding Turkey, Israel and Russian Federation whereas Figure A.4 reports attitudes towards immigrants. The Figures are available on the Supplementary Online Appendix.

[INSERT FIGURES A.2, A.3 AND A.4 HERE]

To identify the populist parties of each country we rely on Van Kessel (2015) and Rooduijn et al. (2019). Van Kessel (2015) uses primary sources such as party manifestos and speeches, and to corroborate the validity of the resulting populist classification, he also asks a pool of country experts to validate or reject it by answering an ad hoc questionnaire. Similarly, Rooduijn et al. (2019) list contains the populist parties in Europe with higher than 2% of the vote in at least one national parliamentary election since 1998. This list identifies 82 populist parties in 28 of the 31 countries examined. To define a party as a populist we rely on Van Kessel definition in which defines a party as populist if it portrays "the people" as virtuous and essentially homogeneous; advocates popular sovereignty, as opposed to elitist rule and defines itself as against the political establishment, which is alleged to act against the interest of the people.

3.2 EMPIRICAL STRATEGY

Initially, we implement an OLS regression model to examine the effect of population aging on political participation and voting for a populist party as well as on political trust and beliefs towards immigrants. Thus, we estimate the following model:

$$y_{ict} = \alpha_0 + \alpha_1 OADR_{ct} + \alpha_2 X_{ict} + \alpha_3 Z_{ct} + +\beta_c + \gamma_t + \epsilon_{ict} \quad (1)$$

y_{ict} denotes the political beliefs, attitudes and vote for a populist party of individual i, in country c, participating in ESS round t. $OADR_{ct}$ is the old-age dependency ratio in country cat ESS round t. We use the contemporaneous values of the aggregated OADR in our benchmark analysis. Our benchmark analysis contains a vector of confounders, X_{ict} is the vector of individual- level controls described above that can affect the voting for a populist party, political trust andattitudes towards immigrants. Z_{ct} includes a number of time-varying country-level controls that can have an impact on populist attitudes, generally. The β_c and γ_t are the country and essround fixed effects respectively, as they capture for unobserved heterogeneity at the country level and time-varying shocks across countries. Finally, ϵ_{ict} is the country and essround specific error term. The standard errors are robust and clustered at the cohort level as individuals are grouped into eleven 7-year age cohorts. In the first part of our baseline analysis

as far as the voting behavioris concerned, our sample is restricted to European countries where individuals voted for at least one populist party. Concerning political trust and anti-immigrant attitudes, we run our baseline specification for the full sample of European countries, excluding from our analysis Turkey, Israel and Russian Federation as outliers because Turkey and Israel do not belong to the European continent geographically, following the specification of Guisoet al. (2020) and Guiso et al. (2021), respectively and on the other hand, Russian Federation has a non democratic political background compared to other European countries. Last, we also drop from our analysis the individuals whoare not eligible to vote; something which is driven by inertia related to their country of origin.

4. EMPIRICAL FINDINGS

4.1 BENCHMARK FINDINGS

This section reports the empirical findings for our baseline analysis. Table 2, documents the effect of old-age dependency ratio (OADR) on voting for a populist party during the last elections. In Columns 1 and 2 we include the full set of the individual controls and as well as country and essround fixed effects and we employ the sample of European countries where individuals have voted for at least one populist party (Guiso et al., 2020), dropping out the individuals who are not eligible to vote at the national elections.

Our findings suggest at first that i) in countries with a high societal aging, the individuals are less likely to participate in elections and ii) when they do so, they are more likely to vote for a populist party. In particular, a 1 unit increase in the old-age dependency ratio (OADR) is associated with a 0.04 percentage point decrease in the probability of voting in last national elections and with a 0.13 percentage point rise in the probability of voting for a populist party. Our results are significant at the 1% level.

[INSERT TABLE 2 HERE]

Table 3 reports the results for political trust and anti-immigrant attitudes. In particular, Panel A reports the results for trust in i) political parties, ii) politicians, iii) national parliament and iv) European parliament. In all columns (1-4) we include the full set of individual controls according to Becker et al. (2017) and also the country level controls as well as country and essround fixed effects. Moreover, following Guiso et al. (2020) and Guiso et al. (2021) we use the whole sample of democratic European countries, excluding for that reason Russian Federation. The results of the table suggest that individuals who live in aging societies tend to mistrust even more political parties, politicians, parliament and European institutions. More analytically, a 1 unit increase in old-age dependency ratio (OADR) makes individuals to trust less the political parties by 0.026, trust less the politicians and national parliament by 0.035 and 0.053 respectively and last, they trust even less the European institutions by 0.083 on the 0-10 scale. The results are significant at the 1% level.

Panel B reports the results for attitudes i) immigrants make host country worse, ii) immigrants undermine the country's culture, iii) immigrants are bad for the economy and last, iv) immigrants take out more than they put in. In all columns (1-4) we include the full set of individual controls and both country and essround fixed effects for the whole European sample. Concerning immigrants, a 1 unit increase in old-age dependency ratio is associated

with a 0.10 rise in beliefs that immigrants make country worse, a 0.11 rise in beliefs that immigrants undermine the host country's culture, a 0.092 rise that immigrants are bad for the country's economy and last, a 0.05 increase in beliefs that immigrants take out more than they put in the country of residence. The results are significant at the 1% confidence level. In general, it is found that individuals who live in aging societies are not so much in favor of immigrants, and they also express strong anti-immigrant attitudes.

[INSERT TABLE 3 HERE]

4.2 DISCUSSION

In this section, we discuss the empirical findings following our baseline specification, exploring the effect of the old-age dependency ratio (OADR) on voting for the right-wing and left-wing populist parties as well as the relation between political conservatism, societal aging and voting for populist parties.

Table 4 reports the effect of old-age dependency ratio (OADR) on voting for right-wing and left-wing populist parties. In order to classify the parties, we follow Rooduijn et al. (2019) and we construct a dummy that takes the value 1 if individuals voted for a right-wing or a left-wing populist party and 0 otherwise. In Columns 1 and 2 we include the full set of the individual controls and as well as country and essround fixed effects and we employ the sample of democratic European countries that have at least one populist party voted (Guiso et al., 2020) as in our benchmark specification, dropping out the individuals who are not eligible to vote at the national elections. Our findings suggest that in countries with high OADR, individuals are more likely to vote for right-wing than left-wing populist parties. More analytically, a 1 unit increase in the old-age dependency ratio (OADR) is associated with a 0.05 percentage point increase in the probability of voting for right-wing populist parties and with a 0.01 percentage point decrease in the probability of voting for a left-wing populist party. Our results are significant at the 1% level for the right voting.

[INSERT TABLE 4 HERE]

Table 5 documents the effect of the old-age dependency ratio (OADR) on voting participation and voting for a populist party using as an additional control the individuals' political orientation measured on a scale between 0 (left-oriented) and 10 (right-oriented) and we find that older people are more conservative, they feel closer to right parties and as a result, they are more prone to vote for a populist party. Our findings remain qualitatively similar to our baseline analysis and quantitatively stronger.

[INSERT TABLE 5 HERE]

In order to explore further the hypothesis on conservatism and voting for populist parties, we split our sample to right-oriented and to left-oriented individuals. The reason is to examine whether the political orientation deferentially affects populist attitudes for each of those two groups. Specifically, we try to investigate whether our results are driven by individuals who are more right-wing oriented. As can be seen from Table 6, both groups contribute to the effect of voting for populist parties, thus the results are qualitatively similar. However, the coefficients are stronger in magnitude for the right-oriented group. Intuitively, left-oriented individuals are not in

favor of participating in national elections compared to right-oriented individuals but on the other hand, right-oriented individuals are more prone to vote for populist parties.

[INSERT TABLE 6 HERE]

Overall, our findings shed light on the mechanics of population aging as an additional determi- nant of populist vote and attitudes. Older societies, as older people alike, tend to adopt a populist approach. Importantly, this is true even after controlling for the individual age, hinting to an aggregate societal mechanism, a mechanism that involves the responses of both young and old people to the economic and social conditions. We will shed more light to this dimension in a later section where we split the sample to find the source of the effect.

5. ROBUSTNESS

The robustness section establishes the robustness of the baseline analysis to a number of alternative specifications such as the use of an alternative measure of the old-age dependency ratio (OADR), the restriction of the sample to populist countries (i.e., we keep only countries where individuals have voted at least one populist party), the exclusion of outliers such as Turkey, and last, keeping only the individuals who hold the citizenship of the country of residence. To further account for unobservables, we conduct our baseline analysis in Nuts 1 regions.

5.1 ALTERNATIVE MEASURES OF OADR

This section establishes the robustness of the baseline analysis to the use of an alternative measure of aging to test the validity of our results using a different definition of the OADR. More specifically, we now consider the ratio of the population above 65 as a fraction of the total population. This is another proxy of population aging. It is not as direct as the OADR which better reflects the dependencies between workers and the share of older individuals, yet it goes to this direction as it captures the societal dynamics.

Table 7 documents the results relating to voting behavior. Columns 1 and 2 replicate the analysis of Table 2, restricting the sample to countries with at least one populist party voted and dropping out of the sample the individuals who are not eligible to vote in elections. Table 8 reports the results related to mistrust in political institutions and attitudes towards immigrants using the whole sample of European countries for the eligible individuals. All findings of our baseline analysis remain qualitatively similar, yet the magnitude is higher, as the OADR under the new specification is taking higher values.

[INSERT TABLE 7 AND TABLE 8 HERE]

5.2 SAMPLE RESTRICTED TO POPULIST COUNTRIES

Table 9 replicates the benchmark analysis, i.e., the effect of population aging measured by the old- age dependency ratio (OADR) on the shaping of trust in political institutions and the attitudes against immigrants, when

restricting our sample to countries with at least one populist party voted by individuals in all ESS rounds. We use this specification as a valid robustness exercise to see whether our results are driven by populist countries and as well as we try to capture the endogenous presence of populist parties. The results are qualitatively similar and in most cases are quantitatively stronger.

[INSERT TABLE 9 HERE]

5.3 SAMPLE RESTRICTED TO INDIVIDUALS WITH CITIZENSHIP

In Table 10 and Table 11 we focus on the sub-sample of individuals who hold the citizenship in their country of residence. This is meant to check whether our results are driven by the attitudes of immigrants who hold the citizenship, who may be more sympathetic towards political institutions and support further migration. Last, we can see whether immigrants with citizenship who are more likely to have voting rights, they are also more prone to vote or not for populist parties. The majority of the results remain robust and significant at the 1% level.

[INSERT TABLE 10 AND TABLE 11 HERE]

5.4 EUROPEAN UNION COUNTRIES SAMPLE

In this subsection, we conduct a robustness test using only the countries that participate in European Union (EU). In accordance with Eurostat, the old-age dependency ratio has increased noticeably in EU regions in the last 20 years. Specifically, as of January 2020, the ratio increased to 35%, meaning there were slightly fewer than three adults of working age for every person aged 65 years or more. On the other hand, most of the populist rhetoric revolves around the anti-EU rhetoric (manifestations include the British vote in favor of "Brexit"; the referendum for a possible "Grexit", or the Eurosceptic rhetoric of Front National Party in France). To this end, we resorted to the same baseline specification but restricted our sample to countries that are EU members.

Table 12 documents the effect of old-age dependency ratio (OADR) on voting for a populist party during the last elections in EU countries, whereas Table 13 reports the results for political trust and anti-immigrant attitudes for the members of EU. Overall, our findings suggest that in EU countries where the old age dependency ratio (OADR) is higher, individuals are not prone to participate in national elections and if so, they tend to vote for a populist party. Furthermore, individuals trust less both the national and EU parliament. As far as immigrant attitudes are concerned, individuals living in EU countries with a high OADR, express anti-immigrant attitudes, believe that immigrants make host countries worse, undermine cultural life and they are bad for the national economy. The results are significant at the 1% level except for trust in parliament which is significant at the 5%.

[INSERT TABLE 12 AND TABLE 13 HERE]

5.5 REGIONAL ANALYSIS

Our baseline analysis controls for a wide range of fixed effects, individual and aggregate controls to capture a large number of unobservables. In this section, we try to further account for potential unobservables by conducting a regional analysis in Nuts 1 European regions as we do not have sufficient variation in Nuts 2 regions. This comes

with benefits and costs. On the one, this allows for the inclusion of a large number of unobservables and helps to eliminate unobserved heterogeneity at the regional level. On the other hand though, the variation of OADR we exploit is more limited compared to the one across countries. To this end we report our results here (which always remain strong) yet we do not choose this as our benchmark specification.

As key explanatory variable we use the regional old-age dependency ratio (OADR) which we interpret as the proxy for population aging. We extract data from the Eurostat from 2002-2019. We use the ratio of older dependent people; older than 64 to the working-age population those aged 15-64. We aggregate the Eurostat data over 2-year intervals in order to match with the ESS in Nuts 1 level. The same individual control variables as in the baseline analysis are used and we also include regional characteristics such as the regional GDP per capita growth, fertility and mortality rates, life expectancy and unemployment.

As in our baseline analysis, our empirical specification is the following:

$$y_{irt} = \alpha_0 + \alpha_1 OADR_{rt} + \alpha_2 X_{irt} + \alpha_3 Z_{rt} + \beta_c + \gamma_t + \epsilon_{irt}. \quad (1)$$

Here, y_{irt} denotes the political beliefs, immigrant attitudes and vote for a populist party of individual i, in region r, participating at ESS round t. The $OADR_{rt}$ is the old-age dependency ratio in region r at ESS round t. We use the contemporaneous values of the OADR as in our benchmark analysis.

Our analysis contains a vector of confounders, X_{irt} is the vector of individual- level controls described above that can affect the voting for a populist party, political trust and attitudes towards immigrants. The Z_{rt} includes a number of time-varying regional-level controls that can have an impact on populist attitudes, generally. The β_c and γ_t are the country and essround fixed effects respectively, as they capture for unobserved heterogeneity at the country level and time-varying shocks across countries. Finally, ϵ_{irt} is the region and essround specific error term. The standard errors are robust and clustered at the cohort level (eleven 7-year age cohorts) as in our baseline analysis. In order to examine the effect of population aging on voting for populist parties we restrict the sample to populist European countries. As far as the trust and immigrant attitudes we use the sample of democratic European countries. Last, we also exclude from our analysis the individuals who are not eligible to vote.

According to Table 14 and Table 15, our findings remain qualitatively and quantitatively similar to our baseline analysis. The effect of population aging on voting behavior, political mistrust and attitudes towards immigrants at the Nuts 1 regions remains strong and statistically significant at the 1% confidence level.

[INSERT TABLE 14 AND TABLE 15 HERE]

6. MECHANISM

Our paper contributes to uncovering an additional factor in the rise of populism, i.e., that of population aging. We consider two mechanisms via which population aging can affect populist attitudes.

The first mechanism relates to the age of the median voter, who naturally becomes older in "old" societies. According to the literature this already partly accounts for our findings as older people tend to become more conservative. Whereas the age of the median voter is an aggregate effect, still it is implicitly driven by the fact that it is the individual attitude that is changing.

The second mechanism appeals to the impact that the presence of the "old" group in the society has on the society and the economy as a whole, it is thus more of an "externality" effect. We argue that living in a society populated by a large share of old people changes the attitudes of both young and old people. Young people are aware of the fact that they have to cater for a large share of old people and this gives rise to different incentives and attitudes compared to individuals living in "young" societies.

To further explore our hypothesized mechanism we split our sample to old individuals who are above 65 years of age and to young individuals below the 64 years. The reason is to examine whether societal population aging deferentially affects populist attitudes for each of those two age groups. To be more precise we try to investigate whether our results are driven by specific age groups. As can be seen from Panel A and Panel B in Table 16, both groups contribute equally to the effect of population aging on individuals' voting behavior. The coefficients are similar in magnitude and significance.

[INSERT TABLE 16 HERE]

Table 17 and Table 18 report the effect of population aging on trust in political institutions and immigrant attitudes splitting the sample to old individuals who are above 65 years of age in Panel A and to young individuals below the 64 years in Panel B. Overall, our results are also similar to our baseline analysis indicating that the results are not driven by a specific age group.

[INSERT TABLE 17 AND TABLE 18 HERE]

The presence of an old audience also allows politicians to approach this group differently and appeal to it via collective memory. Past experiences and historical events have been argued to have a long-term impact in all areas of economic decision-making (Malmendier (2021) on historical events and traumatic past experiences, Gavresi and Litina (2023) on the role of macroeconomic shocks during their impressionable years between 18 and 25 years of age on populist attitudes, Fouka and Voth (2016) on how past events can trigger selective recall, Dinas et al. (2021)on histor- ical experiences of past violence and repression and the formation of persistent social identities).

Relying on this, populist parties often are mobilized through platforms that build heavily on historical memory, offering a nostalgic and sometimes reinvented vision of the past (De Cesari et al., 2020) and find new ways to secure the favorable votes of the median voter.

7. CONCLUDING REMARKS

This paper establishes the interplay of the population aging as a novel determinant of the greater demand for populism in Europe. Individuals who live in European countries which have a higher old-age dependency ratio (OADR) tend to participate less in national elections and if so, they tend to support populist parties. They also trust less the political institutions and manifest stronger anti-immigrant attitudes.

There are two potential mechanisms driving our result. First, a shift in the median voter age. Older people tend to be more conservative, and this is reflected on the median vote and attitude as well. More conservative individuals, are more right-wing oriented, voting for right-wing populist parties and as a result, these individuals are more prone to vote for populist parties. The second mechanism appeals to the impact that the presence of the "old" group in the society has on the society and the economy as a whole, it is thus more of an "externality" effect. Living in a society populated by a large share of old people changes the attitudes of both young and old people. Young people are aware of the fact that they have to cater for a large share of old people and this gives rise to different incentives and attitudes compared to individuals living in "young" societies.

The policy implications of our findings are clear as they suggest another risk (political and societal) associated with population aging, beyond the direct economic consequences of the phe- nomenon. They also hint to the approaches hidden in the political platforms of populist parties, especially via appealing to collective memory and past shocks. Mainstream parties should consider the danger and include in their political agenda the preferences and needs of younger individuals not targeting solely, the median voter.

LIST OF TABLES

Table 1: Descriptive Statistics

	min	max
Voting participation		
Vote in last national elections	0	1
Vote for a populist party	0	1
Vote for a right-wing populist party	0	1
Vote for a left-wing populist party	0	1
Political trust		
Trust in political parties	0	10
Trust in politicians	0	10
Trust in parliament	0	10
Trust in EU parliament	0	10
Attitudes towards immigrants		
Immigrants make country worse	0	10
Immigrants undermine country's culture	0	10
Immigrants are bad for the country's economy	0	10
Immigrants take out more than they put in	0	10
Individual characteristics		
Men	0	1
Age at interview	14	105
Education status	1	5
Income sources	1	7
Income difficulties	1	4
Globalization exposure	0	1
Race	1	2
Health status	1	5
Life satisfaction	1	10
Marital status	1	6
Political orientation	0	10
Country characteristics		
Old age dependency ratio (OADR)	10.25	35.82
Fraction of Old above 65	6.62	22.88
Life expectancy	67.15	83.75
Fertility rate	1.17	3.11
Mortality Rate	1.6	23.1
Unemployment rate	2.08	25.44
Trade (% GDP)	46.69	289.49
Health expenditures	4.75	11.87
GDP per capita in PPP	10759.28	103676.10
Nuts 1 characteristics		
Regional OADR	15.87	42.78
Regional real growth rate	-5.0	16.6
Regional life expectancy	73.20	85.65
Regional fertility rate	0.96	2.04
Regional mortality Rate	0	10.75
Regional unemployment rate	2.15	34.30

Notes: The table reports the descriptive statistics of old-age dependency ratio (OADR), fraction of old above 65, participation in voting, vote for populist parties, vote for a right-wing populist party, vote for a left-wing populist party, trust in political institutions; i) parties, ii) politicians, iii) national parliament and iv) European parliament, satisfaction from national government, attitudes towards immigrants; i) immigrants make host country worse, ii) immigrants undermine country's culture, iii) immigrants are bad for the country's economy and iv) immigrants take out more than they put in, individual demographic characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, political orientation, marital and health status. As country controls aggregate GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure and as regional controls in Nuts 1 regions are the regional old-age dependency ratio (OADR), real growth rate, regional life expectancy, fertility and mortality rates and regional unemployment rate.

Table 2: Aging and Voting Participation and Voting for Populist Parties

	Vote in last elections	Vote populist parties
	(1)	(2)
OADR	-.0042**	.0130***
	[.0014]	[.0012]
R-squared	.11	.19
Sample	305091	216566
Individual Controls	Yes	Yes
Country-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on participation in voting and vote for a populist party. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are us ed, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of the survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 3: Aging, Political Trust and Attitudes Towards Immigrants

	Trust Parties	Trust Politicians	Trust Parliament	Trust EU
	(1)	(2)	(3)	(4)
Panel A.				
OADR	-.0264***	-.0349***	-.0528***	-.0825***
	[.0078]	[.0064]	[.0076]	[.0053]
R-squared	.22	.21	.23	.09
Sample	293477	327446	325563	299896
	Immigrants make country worse	Immigrants undermine culture	Immigrants bad for economy	Immigrants take out more
	(1)	(2)	(3)	(4)
Panel B.				
OADR	.1092***	.1180***	.0922***	.0488***
	[.0042]	[.0043]	[.0051]	[.0138]
R-squared	.16	.18	.14	.09
Sample	317569	318708	317982	62253
Individual Controls	Yes	Yes	Yes	Yes
Country-Level Controls	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Essround Fixed Effects	Yes	Yes	Yes	Yes
Cluster SE	Cohort	Cohort	Cohort	Cohort
Countries	All	All	All	All

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on political trust and immigrant attitudes. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 4: Discussion: Aging and Voting Right-Wing and Left-Wing Populist Parties

	Vote right-wing pop. parties	Vote left-wing pop. parties
	(1)	(2)
OADR	.0053***	-.0009
	[.0015]	[.0006]
R-squared	.18	.08
Sample	240831	280435
Individual Controls	Yes	Yes
Country-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on voting for right-wing and left-wing populist parties. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of the survey. Roboststandard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 5: Discussion: Aging, Conservatism and Voting for Populist Parties

	Vote in last elections	Vote populist parties
	(1)	(2)
OADR	-.0044**	.0138***
	[.0014]	[.0011]
Right Voter	.0033***	.0202***
	[.0006]	[.0005]
R-squared	.10	.20
Sample	272831	203794
Individual Controls	Yes	Yes
Country-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on voting participation and voting for populist parties. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As an extra control variable political orientation is used. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of the survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 6: Discussion (Split the Sample): Aging, Conservatism and Voting for Populist Parties

	Vote in last elections	Vote populist parties
	(1)	(2)
Panel A. Right Political Orientation		
OADR	-.0031*	.0157***
	[.0015]	[.0015]
R-squared	.12	.26
Sample	218195	148096
	Vote in last elections	Vote populist parties
	(1)	(2)
Panel B. Left Political Orientation		
OADR	-.0072***	.0083***
	[.0020]	[.0025]
R-squared	.10	.19
Sample	86896	68470
Individual Controls	Yes	Yes
Country-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on voting participation and voting for populist parties, splitting the sample to right and left political orientation. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects.The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of the survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 7: Aging Fraction and Voting Participation and Voting for Populist Parties

	Vote in last elections	Vote populist parties
	(1)	(2)
Fraction OADR	-.0089**	.0231***
	[.0029]	[.0020]
R-squared	.11	.19
Sample	305091	216566
Individual Controls	Yes	Yes
Country-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to a fraction of old-age dependency ratio (OADR) and its effect on participation in voting and vote for a populist party. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of the survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 8: Aging Fraction, Political Trust and Attitudes Towards Immigrants

	Trust Parties	Trust Politicians	Trust Parliament	Trust EU
	(1)	(2)	(3)	(4)
Panel A.				
Fraction OADR	-.0272*	-.0487***	-.0798***	-.1371***
	[.0146]	[.0110]	[.0131]	[.0104]
R-squared	.22	.21	.23	.09
Sample	293477	327446	325563	299896
	Immigrants make country worse	Immigrants undermine culture	Immigrants bad for economy	Immigrants take out more
	(1)	(2)	(3)	(4)
Panel B.				
Fraction OADR	.2039***	.2331***	.1886***	.1135***
	[.0098]	[.0103]	[.0113]	[.0248]
R-squared	.16	.18	.14	.09
Sample	317569	318708	317982	62253
Individual Controls	Yes	Yes	Yes	Yes
Country-Level Controls	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Essround Fixed Effects	Yes	Yes	Yes	Yes
Cluster SE	Cohort	Cohort	Cohort	Cohort
Countries	All	All	All	All

Notes: This table establishes the exposure to a fraction of old-age dependency ratio (OADR) and its effect on political trust and anti-immigrant attitudes. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 9: Populist Countries: Aging, Political Trust and Attitudes Towards Immigrants

	Trust Parties	Trust Politicians	Trust Parliament	Trust EU
	(1)	(2)	(3)	(4)
Panel A.				
OADR	-.0431***	-.0433***	-.0597***	-.0684***
	[.0084]	[.0061]	[.0068]	[.0047]
R-squared	.21	.20	.22	.09
Sample	272197	303783	302230	280143
	Immigrants make country worse	Immigrants undermine culture	Immigrants bad for economy	Immigrants take out more
	(1)	(2)	(3)	(4)
Panel B.				
OADR	.1166***	.1255***	.0949***	.0261*
	[.0053]	[.0054]	[.0052]	[.0134]
R-squared	.16	.18	.15	.09
Sample	295483	296541	296116	59082
Individual Controls	Yes	Yes	Yes	Yes
Country-Level Controls	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Essround Fixed Effects	Yes	Yes	Yes	Yes
Cluster SE	Cohort	Cohort	Cohort	Cohort
Countries	With P	With P	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on political trust and anti-immigrant attitudes restricting te sample to countries with at least one populist party. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of the survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 10: Individuals with Citizenship: Aging and Voting Participation and Voting for Populist Parties

	Vote in last elections	Vote populist parties
	(1)	(2)
OADR	-.0045**	.0129***
	[.0014]	[.0012]
R-squared	.11	.19
Sample	299743	214999
Individual Controls	Yes	Yes
Country-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on participation in voting and vote for a populist party restricting the sample to individuals hold the citizenship of the country of residence. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As countrycontrols logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of the survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at 1% level, ** at the 5% level, and *at 10% confidence level.

Table 11: Individuals with Citizenship: Aging, Political Trust and Attitudes Towards Immigrants

	Trust Parties	Trust Politicians	Trust Parliament	Trust EU
	(1)	(2)	(3)	(4)
Panel A.				
OADR				
	-.0248**	-.0326***	-.0512***	-.0821***
	[.0081]	[.0068]	[.0074]	[.0057]
R-squared	.22	.21	.23	.09
Sample	288388	321718	319968	294412
	Immigrants make country worse	Immigrants undermine culture	Immigrants bad for economy	Immigrants take out more
	(1)	(2)	(3)	(4)
Panel B.				
OADR	.1089***	.1180***	.0920***	.0480***
	[.0038]	[.0037]	[.0048]	[.0136]
R-squared	.16	.18	.14	.09
Sample	311759	312819	312116	61104
Individual Controls	Yes	Yes	Yes	Yes
Country-Level Controls	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Essround Fixed Effects	Yes	Yes	Yes	Yes
Cluster SE	Cohort	Cohort	Cohort	Cohort
Countries	All	All	All	All

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on political trust and anti-immigrant attitudes restricting the sample to individuals hold the citizenship of the country of residence. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 12: EU Countries: Aging and Voting Participation and Voting for Populist Parties

	Vote in last elections	Vote populist parties
	(1)	(2)
OADR	-.0028**	.0081***
	[.0010]	[.0012]
R-squared	.11	.20
Sample	277635	196602
Individual Controls	Yes	Yes
Country-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on political trust and immigrant attitudes for EU countries. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of the survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 13: EU Countries: Aging, Political Trust and Attitudes Towards Immigrants

	Trust Parties	Trust Politicians	Trust Parliament	Trust EU
	(1)	(2)	(3)	(4)
Panel A.				
OADR	-.0014	-.0047	-.0138**	-.0556***
	[.0077]	[.0049]	[.0055]	[.0048]
R-squared	.20	.20	.21	.09
Sample	261657	291806	289956	269844
	Immigrants make country worse	Immigrants undermine culture	Immigrants bad for economy	Immigrants take out more
	(1)	(2)	(3)	(4)
Panel B.				
OADR	.1131***	.1309***	.1044***	.0295
	[.0045]	[.0071]	[.0066]	[.0173]
R-squared	.16	.18	.14	.09
Sample	282975	283595	283413	56363
Individual Controls	Yes	Yes	Yes	Yes
Country-Level Controls	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Essround Fixed Effects	Yes	Yes	Yes	Yes
Cluster SE	Cohort	Cohort	Cohort	Cohort
Countries	All	All	All	All

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on political trust and immigrant attitudes for EU countries. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 14: Regional-Level Analysis: Aging and Voting Participation and Voting for Populist Parties

	Vote in last elections	Vote populist parties
	(1)	(2)
OADR	-.0028***	.0064***
	[.0007]	[.0006]
R-squared	.11	.24
Sample	139282	96460
Individual Controls	Yes	Yes
Regional-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on participation in voting and vote for a populist party in Nuts 1 level. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As regional controls GDP per capita growth, unemployment, life expectancy, fertility and mortality rates are used, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individualsvoted for at least one populist party during the years of the survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and
* at the 10% confidence level.

Table 15: Regional-Level Analysis: Aging, Political Trust and Attitudes Towards Immigrants

	Trust Parties	Trust Politicians	Trust Parliament	Trust EU
	(1)	(2)	(3)	(4)
Panel A.				
OADR	-.0155***	-.0124***	-.0431***	-.0376***
	[.0033]	[.0035]	[.0051]	[.0035]
R-squared	.21	.21	.22	.09
Sample	144940	145419	144686	137013
	Immigrants make country worse	Immigrants undermine culture	Immigrants bad for economy	Immigrants take out more
	(1)	(2)	(3)	(4)
Panel B.				
OADR	.0424***	.0515***	.0479***	.0338***
	[.0025]	[.0023]	[.0034]	[.0083]
R-squared	.16	.19	.14	.10
Sample	140957	141621	141451	24636
Individual Controls	Yes	Yes	Yes	Yes
Country-Level Controls	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Essround Fixed Effects	Yes	Yes	Yes	Yes
Cluster SE	Cohort	Cohort	Cohort	Cohort
Countries	All	All	All	All

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on political trust and anti-immigrant attitudes in Nuts 1 level. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As regional controls GDP per capita growth, unemployment, life expectancy, fertility and mortality rates and percentages of unemployment are used, as well as country and essround fixed effects. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 16: Split the Sample: Aging and Voting Participation and Voting for Populist Parties

	Vote in last elections	Vote populist parties
	(1)	(2)
Panel A. Old Age Groups		
OADR	-.0016	.0106***
	[.0013]	[.0014]
R-squared	.09	.18
Sample	73650	55627
	Vote in last elections	Vote populist parties
	(1)	(2)
Panel B. Young Age Groups		
OADR	-.0049**	.0144***
	[.0018]	[.0011]
R-squared	.12	.20
Sample	231441	160939
Individual Controls	Yes	Yes
Country-Level Controls	Yes	Yes
Country Fixed Effects	Yes	Yes
Essround Fixed Effects	Yes	Yes
Cluster SE	Cohort	Cohort
Countries	With P	With P

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on participation in voting and vote for a populist party, splitting the sample to old and young individuals. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. The sample is restricted to the ESS countries where individuals voted for at least one populist party during the years of survey. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 17: Split the Sample: Aging and Political Trust

	Trust Parties	Trust Politicians	Trust Parliament	Trust EU
	(1)	(2)	(3)	(4)
Panel A. Old Age Groups				
OADR	-.0115*	-.0251**	-.0254***	-.0816***
	[.0054]	[.0073]	[.0058]	[.0105]
R-squared	.19	.19	.19	.09
Sample	72305	79476	78941	69168
	Trust Parties	Trust Politicians	Trust Parliament	Trust EU
	(1)	(2)	(3)	(4)
Panel B. Young Age Groups				
OADR	-.0305**	-.0373***	-.0597***	-.0842***
	[.0098]	[.0078]	[.0079]	[.0065]
R-squared	.23	.22	.25	.09
Sample	221172	247970	246622	230728
Individual Controls	Yes	Yes	Yes	Yes
Country-Level Controls	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Essround Fixed Effects	Yes	Yes	Yes	Yes
Cluster SE	Cohort	Cohort	Cohort	Cohort
Countries	All	All	All	All

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on political trust, splitting the sample to old and young individuals. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As country controls logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * at the 10% confidence level.

Table 18: Split the Sample: Aging and Attitudes Towards Immigrants

	Immigrants make country worse	Immigrants undermine culture	Immigrants bad for economy	Immigrants take out more
	(1)	(2)	(3)	(4)
Panel A. Old Age Groups				
OADR	.0974***	.1180***	.0718***	.0517*
	[.0090]	[.0094]	[.0040]	[.0232]
R-squared	.15	.16	.15	.10
Sample	75818	75476	75627	14017
	Immigrants make country worse	Immigrants undermine culture	Immigrants bad for economy	Immigrants take out more
	(1)	(2)	(3)	(4)
Panel B. Young Age Groups				
OADR	.1134***	.1176***	.0993***	.0499**
	[.0036]	[.0051]	[.0040]	[.0169]
R-squared	.15	.18	.14	.09
Sample	241751	243232	242355	48236
Individual Controls	Yes	Yes	Yes	Yes
Country-Level Controls	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Essround Fixed Effects	Yes	Yes	Yes	Yes
Cluster SE	Cohort	Cohort	Cohort	Cohort
Countries	All	All	All	All

Notes: This table establishes the exposure to old-age dependency ratio (OADR) and its effect on anti-immigrant attitudes, splitting the sample to old and young individuals. The analysis controls for individual characteristics such as age, gender, race, education, income source, income difficulties, exposure to globalization, life satisfaction, marital and health status. As countrycontrols logged GDP per capita in PPP, unemployment, life expectancy, fertility and mortality rates, percentages of unemployment, trade and health expenditure are used, as well as country and essround fixed effects. Robust standard errors clustered at the cohort level are shown in parenthesis; *** denotes statistical significance at the 1% level, ** at the 5% level, and * atthe 10% confidence level.

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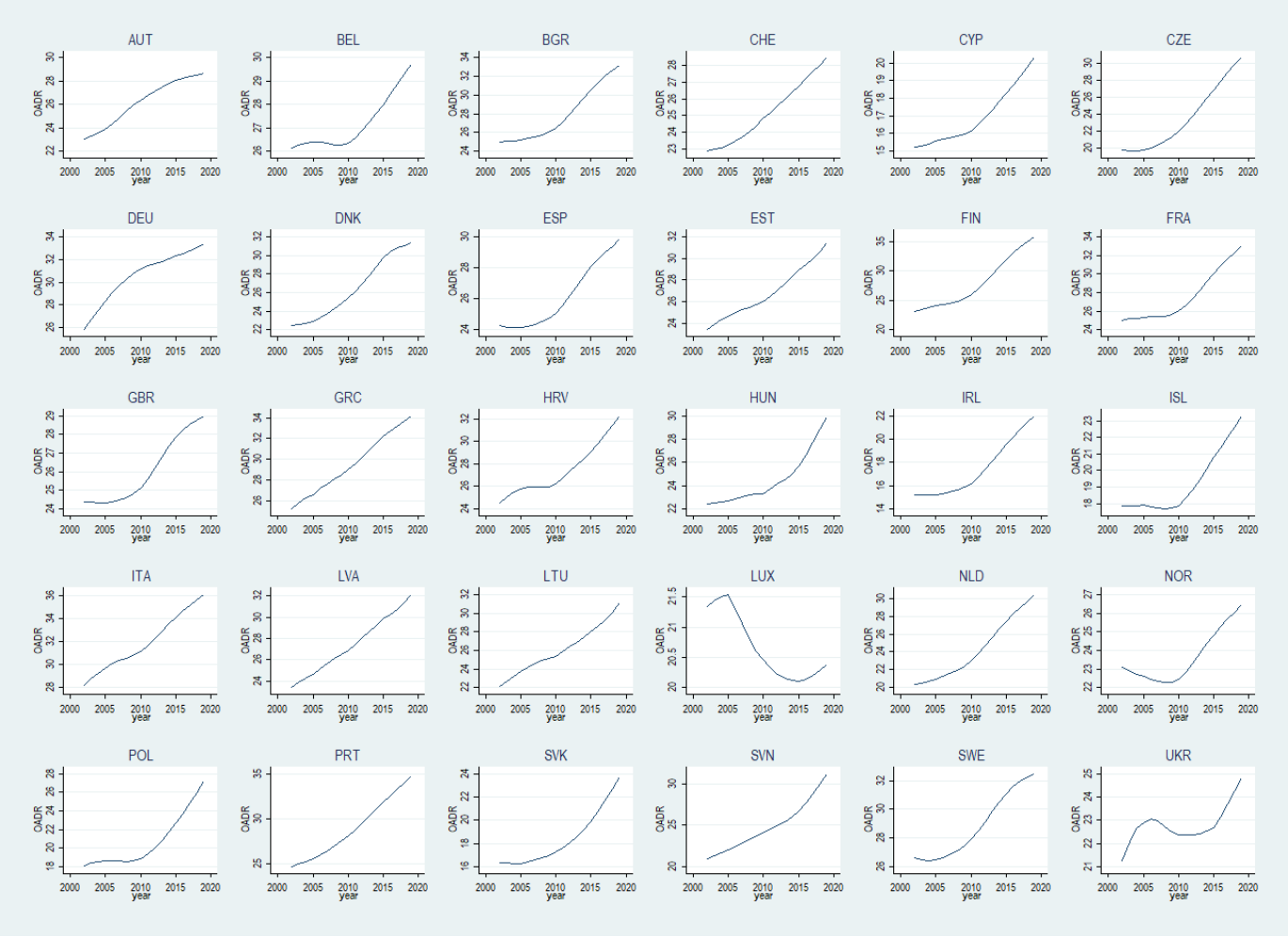
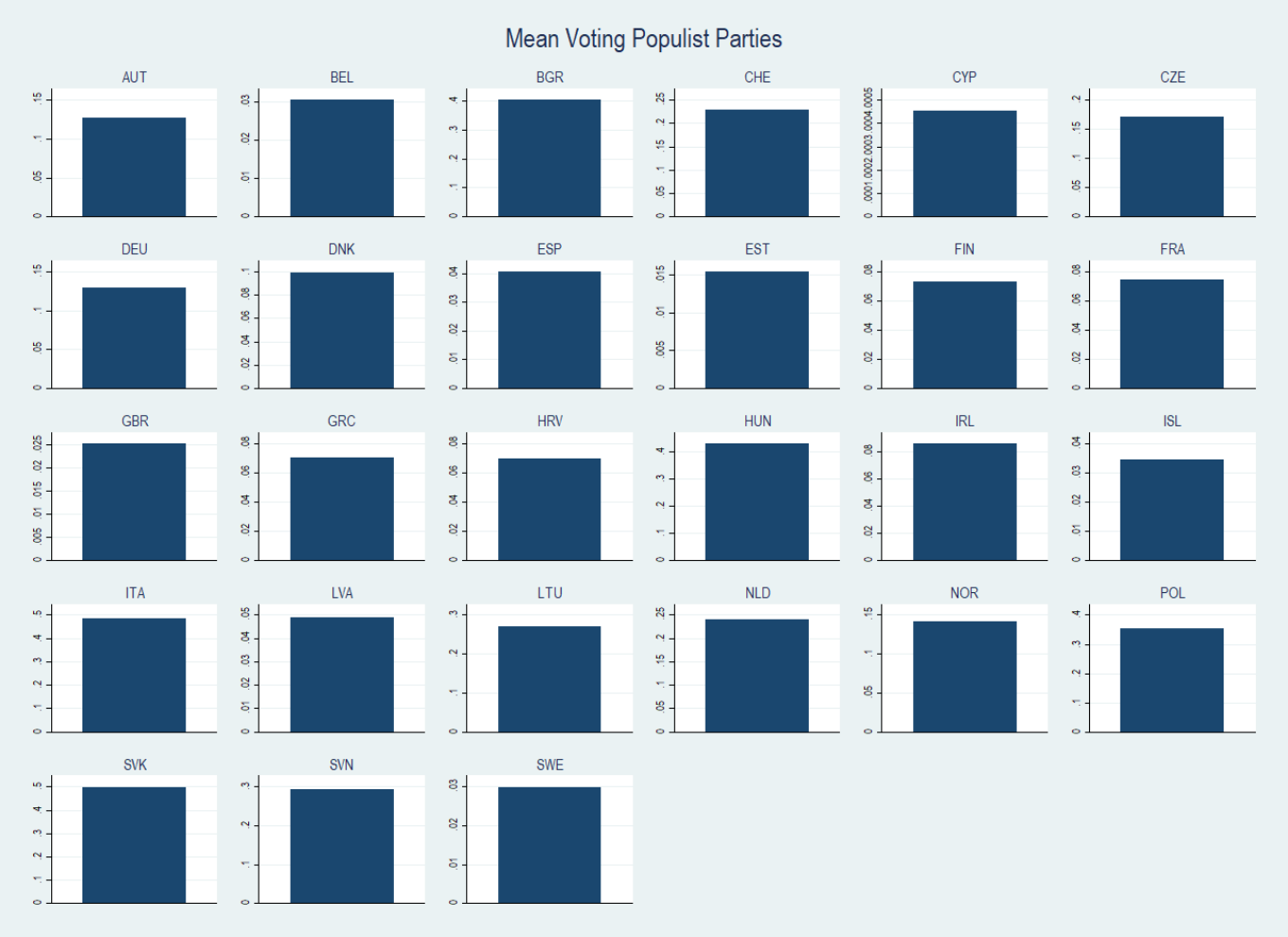
Figure A.1: The Evolution of the OADR from 2002 to 2019 in Europe



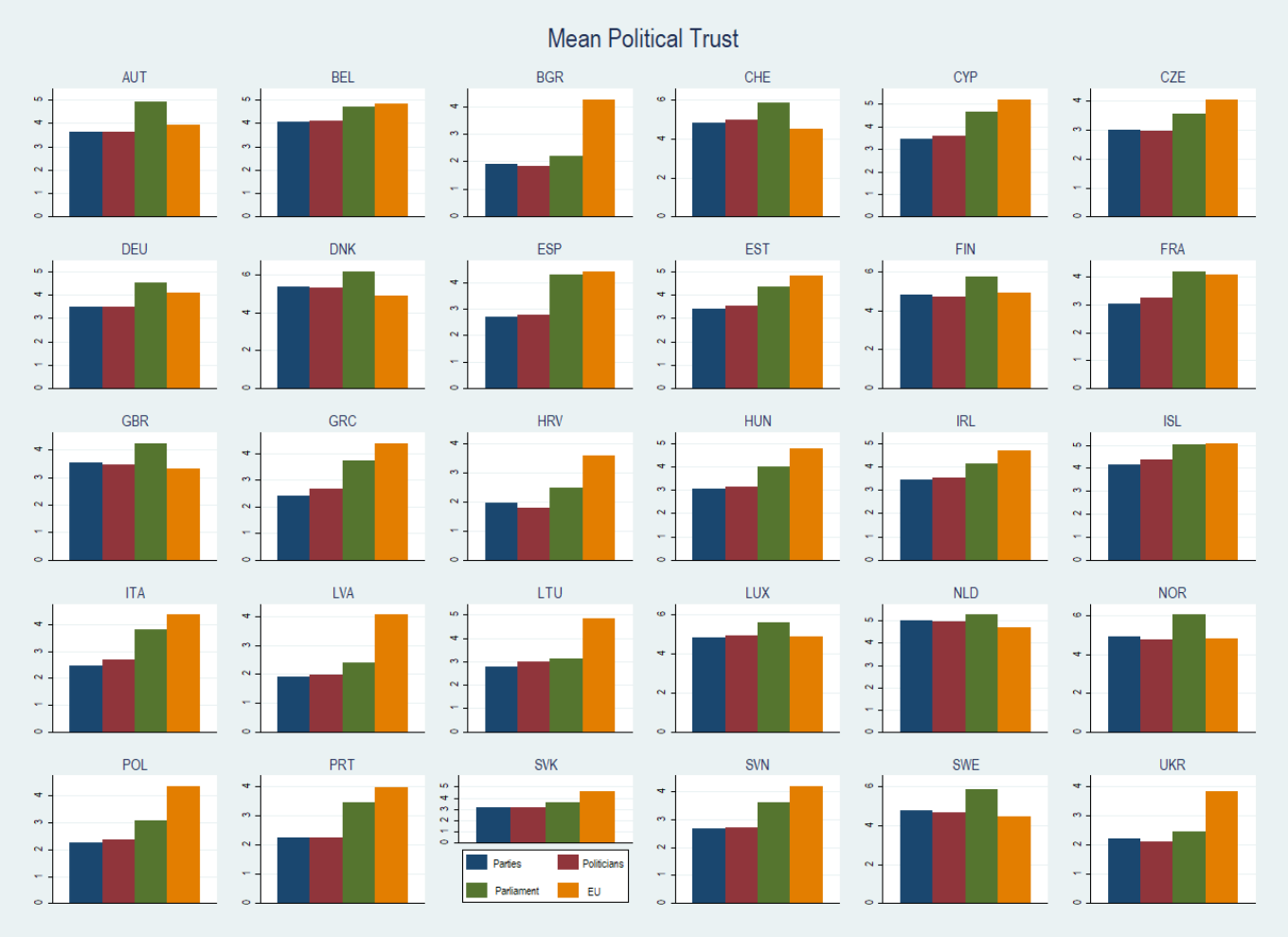
Notes: This figure presents the OADR in European countries from 2002 to 2019. *Source: World Bank Indicators.*

Figure A.2: Voting Shares in Europe



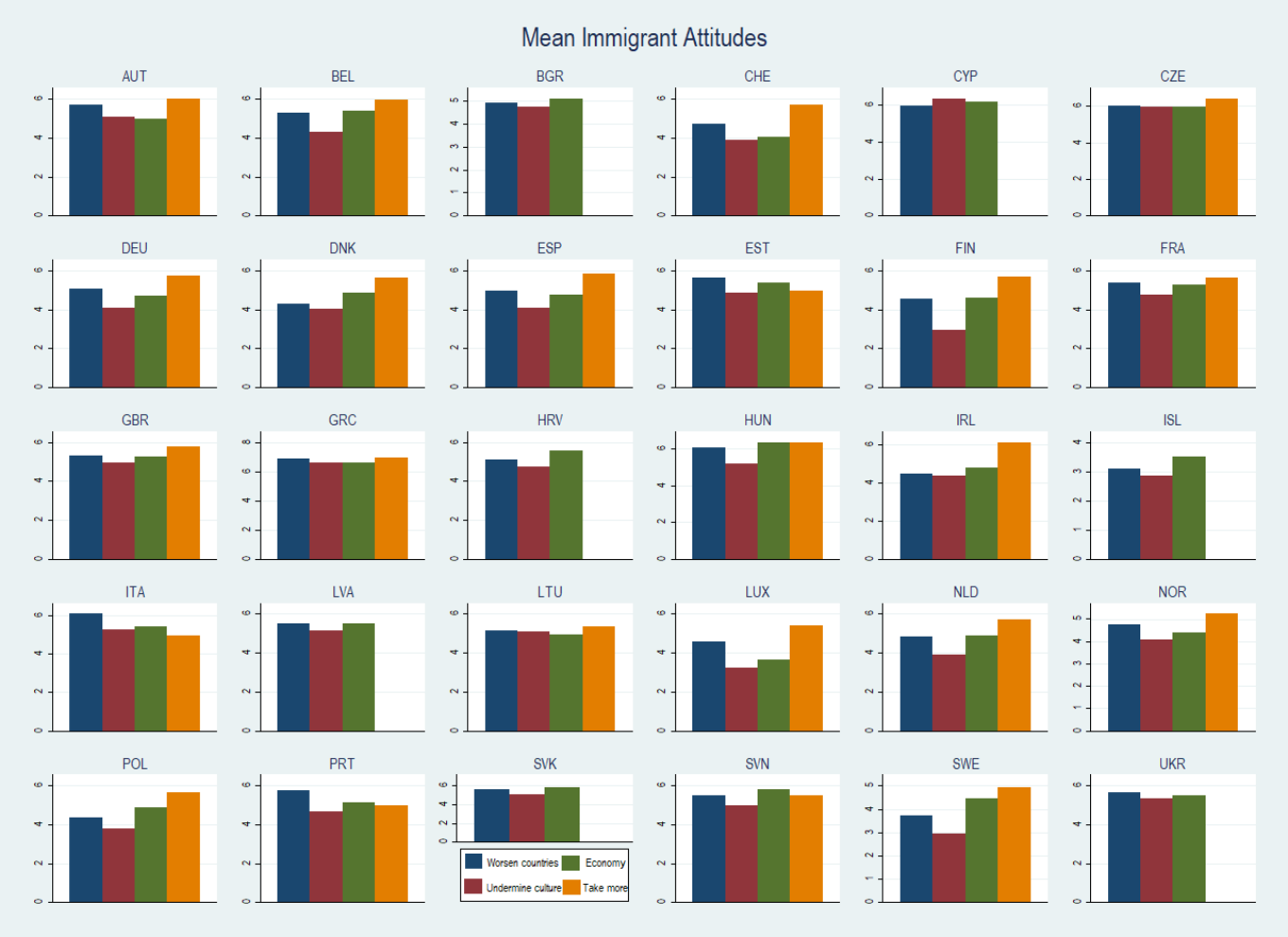
Notes: This figure presents the (mean) shares of voting for populist parties , by each European country where individuals voted at least one populist party. Voting for populist parties is taking the value 1 whether he or she voted for a populist party and 0 otherwise. *Source: European Social Survey.*

Figure A.3: Political Trust in Europe



Notes: This figure presents (mean) level of trust in political institutions e.g., trust in political parties (blue), parliament (red), politicians (green) and EU (orange). by each European country. Trust in political institutions proxies are measured on a scale between 0 (no trust) and 10 (full trust). *Source: European Social Survey.*

Figure A.4: Immigrant Attitudes in Europe



Notes: This figure presents (mean) level of attitudes toward immigrants e.g., immigrants make countries worse (blue), immigrants undermine culture (red), immigrants are bad for the economy (green) and immigrants take out more than they put in the host country (orange), by each European country. Immigrant attitudes proxies are measured on a scale between 0 (against immigrants) and 10 (favor immigrants). *Source: European Social Survey.*

REFERENCES

Acemoglu, D., Egorov, G., and Sonin, K. (2013). A Political Theory of Populism. *The QuarterlyJournal of Economics*, 128(2):771–805.

Algan, Y., Guriev, S., Papaioannou, E., and Passari, E. (2017). The European Trust Crisis andthe Rise of Populism. *Brookings Papers on Economic Activity*, 2017(2):309–400.

Arzheimer, K. (2009).Contextual Factors and the Extreme Right Vote in Western Europe,1980–2002. *American Journal of Political Science*, 53(2):259–275.

Ashcroft, R. and Bevir, M. (2016). Pluralism, National Identity and Citizenship: Britain AfterBrexit. *Political Quarterly*, 87(3):355–359.

Barone, G., de Blasio, G., and Naticchioni, P. (2014). Mr. Rossi, Mr. Hu and Politics: The Roleof Immigration in Shaping Natives' Political Preferences.

Becker, S. O., Fetzer, T., and Novy, D. (2017). Who Voted for Brexit? A Comprehensive District-Level Analysis. *Economic Policy*, 32(92):601–650.

Boeri, T., Gamalerio, M., Morelli, M., and Negri, M. (2023). Pay-as-They-Get-in: Attitudestowards Migrants and Pension Systems. *BAFFI CAREFIN Centre Research Paper*, (197).

Bratton, M. and Kimenyi, M. S. (2008). Voting in Kenya: Putting Ethnicity in Perspective. *Journal of Eastern African Studies*, 2(2):272–289.

Burgoon, B. (2013). Inequality and Anti-Globalization Backlash by Political Parties. *European Union Politics*, 14(3):408–435.

Clarke, S. and Whittaker, M. (2016). *The Importance of Place: Explaining the Characteristics Underpinning the Brexit Vote Across Different Parts of the UK*. Resolution Foundation.

Comolli, C. L. and Vignoli, D. (2021). Spreading Uncertainty, Shrinking Birth Rates: A NaturalExperiment for Italy. *European Sociological Review*, 37(4):555–570.

Curtice, J. (2018). How Young and Old Would Vote on Brexit Now. Access at https://www.bbc.com/news/uk-politics-45098550.

De Cesari, C., Bosilkov, I., and Piacentini, A. (2020). (why) Do Eurosceptics Believe in a Common European Heritage? In *European Memory in Populism*. Taylor & Francis.

Di Tella, R. and Rotemberg, J. J. (2018). Populism and the Return of the "Paranoid Style": Some Evidence and a Simple Model of Demand for Incompetence as Insurance Against Elite Betrayal. *Journal of Comparative Economics*, 46(4):988–1005.

Dinas, E., Fouka, V., and Schläpfer, A. (2021). Family History and Attitudes toward Out-groups: Evidence from the European Refugee Crisis. *The Journal of Politics*, 83(2):647–661.

Dippel, C., Gold, R., and Heblich, S. (2015). Globalization and Its (Dis-) Content: Trade Shocksand Voting Behavior. Technical report, National Bureau of Economic Research.

Dustmann, C., Eichengreen, B., Otten, S., Sapir, A., Tabellini, G., and Zoega, G. (2017). Europe's Trust Deficit. *Causes and Remedies. London: Centre for Economic Policy Research*.

Ferree, K. E., Powell, G. B., and Scheiner, E. (2014). Context, Electoral Rules, and Party Systems. *Annual Review of Political Science*, 17:421–439.

Fouka, V. and Voth, J. (2016). Collective Remembrance and Private Choice: German-Greek Con- flict and Consumer Behavior in Times of Crisis. *Stanford Center for International Development Working Paper No*, 587(6):26.

Gavresi, D. and Litina, A. (2023). Past Exposure to Macroeconomic Shocks and Populist Attitudes in Europe. *Journal of Comparative Economics*.

Guiso, L., Herrera, H., Morelli, M., and Sonno, T. (2019). Global Crises and Populism: The Role of Eurozone Institutions. *Economic Policy*, 34(97):95–139.

Guiso, L., Herrera, H., Morelli, M., and Sonno, T. (2020). Economic Insecurity and the Demandof Populism in Europe. *Einaudi Institute for Economics and Finance*.

Guiso, L., Morelli, M., Sonno, T., and Herrera, H. (2021). The Financial Drivers of Populism inEurope. *BAFFI CAREFIN Centre Research Paper*, (2021-166).

Guriev, S. and Papaioannou, E. (2020). The Political Economy of Populism. *Available at SSRN 3542052*.

Gusterson, H. (2017). From Brexit to Trump: Anthropology and the Rise of Nationalist Populism. *American ethnologist*, 44(2):209–214.

Helm, T. (2016). Eu Referendum: Youth Turnout Almost Twice As High As First Thought. Access at https://www.theguardian.com/politics/2016/jul/09/young-people-referendum-turnout- brexit-twice-as-high.

Kana, M. A., Correia, S., Peleteiro, B., Severo, M., and Barros, H. (2017). Impact of the Global Financial Crisis on Low Birth Weight in Portugal: A Time-Trend Analysis. *BMJ global health*,2(2):e000147.

Malmendier, U. (2021). Exposure, Experience, and Expertise: Why Personal Histories Matter in Economics. Technical report, National Bureau of Economic Research.

Reynaud, C. and Miccoli, S. (2019). Population Ageing in Italy After the 2008 Economic Crisis:A Demographic Approach. *Futures*, 105:17–26.

Rodrik, D. (2018). Populism and the Economics of Globalization. *Journal of International Busi- ness Policy*, 1(1):12–

Rooduijn, M., Van Kessel, S., Froio, C., Pirro, A., De Lange, S., Halikiopoulou, D., Lewis, P., Mudde, C., and Taggart, P. (2019). The Populist: An Overview of Populist, Far Right, Far Left and Eurosceptic Parties in Europe.

Tolbert, C. J. and Hero, R. E. (1996). Race/Ethnicity and Direct Democracy: An Analysis of California's Illegal Immigration Initiative. *The Journal of Politics*, 58(3):806–818.

Van Kessel, S. (2015). *Populist Parties in Europe: Agents of Discontent?* Springer.

Whitaker, R. and Lynch, P. (2011). Explaining Support for the Uk Independence Party at the 2009 European Parliament Elections. *Journal of Elections, Public Opinion & Parties, 21(3):359–379.*