Population aging, voting, and political agendas *

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Abstract

We study how population aging interacts with voters' representation, engagement with politics, and the content of political agendas. Leveraging the European Social Survey, we observe that over the past two decades, individuals under the age of 50 have become a minority within the voter population. This shift has been exacerbated by a decline in the turnout propensity of those under 50, juxtaposed with an increase among older age groups. The evolution of turnout propensity has unfolded gradually across cohorts: each successive cohort entering the eligible voter population has exhibited lower turnout rates compared to its predecessors and has failed to converge to previous levels throughout its lifecycle. The disengagement of younger workers has been more pronounced in countries that have aged faster. Moreover, these dynamics have coincided with a shift in the political agenda. Through an analysis of political manifestos, we demonstrate a switch towards topics appealing to older voters, notably retirement policies. Similarly to the case of turnout, this shift has been stronger in countries where the population has aged more.

Keywords— aging, Voting, Political agendas
JEL codes— D72, J10, J26

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1 Introduction

Demographic shifts, driven by factors such as declining birth rates and increasing life expectancy, are reshaping the age composition of societies. These changes present a multifaceted challenge that extends beyond mere demographics: it is also a significant political challenge. As the proportion of elderly individuals in the population grows, the relative number of young voters diminishes, leading to a change in the composition of eligible voters. In particular, the 18-50-year-old group has become a minority within the voting population of European countries as of 2007. Simultaneously, for the first time in history, individuals in the concluding stages of their working career, or those beyond the working age, have emerged as the pivotal demographic in the electorate. This creates an incentive for politicians to focus more on policies that cater to their interests and needs, such as healthcare and pension benefits. This might lead to neglect of issues important to younger generations and therefore to their progressive political disengagement and sense of disenfranchisement (Vlandas, 2023).

In this paper, we gather data from the European Social Survey (ESS henceforth) and the Political Manifesto Project Database to study these questions. Our analysis proceeds in two steps.

First, we explore the evolution of electoral engagement among younger voters over time. We document and quantitatively measure the existence of a demographic trend by showing how in two decades, voters under the age of 50 passed from being the majority to being the minority group in the pool of eligible voters. We then investigate whether variations in turnout propensities have mitigated or amplified this trend. We show that different age groups have different propensities to vote at baseline. In addition, over our sample period, the turnout propensities of individuals older than 50 have slightly increased. Conversely, those of individuals younger than 50 have decreased by about 6% in less than 20 years. This divergence in turnout propensity has significantly exacerbated the pure demographic trend leading to a change in the pool of voters towards more elderly individuals. Importantly, and perhaps surprisingly, we find that the evolution of turnout propensity has decreased gradually across cohorts: each successive cohort entering the eligible voter population has exhibited lower turnout rates compared to its predecessors and has failed to converge to previous levels throughout its lifecycle. Given that this cross-cohort pattern has persisted since at least the cohorts that started voting in the late 1970s, we infer that a process of progressive disengagement from politics started decades ago. While this process will lead to a dramatic reduction in the voter population in a few decades, the transition will be characterized by an underrepresentation of younger voters. We conclude by demonstrating that the countries experiencing the most significant population aging in recent decades have also seen the greatest decline in political engagement among younger voters. To uncover this relationship, we employ long-difference regressions, regressing the 20-year change (from 2002 to 2018) in the turnout ratio of under-50 to over-50 voters on the change in the share of the population aged 50 to 70. By using first differences, we account for country fixed effects and further control for differential trends across countries, as predicted by real GDP. To mitigate concerns that our key explanatory variable may be influenced by migration

or demographic responses to economic shocks during the period of analysis, we instrument the change in the 50-70 age share with a projected change based on the share of 30-50-year-olds in the baseline year (2001). Our results indicate that a one standard deviation increase in the share of 50-70-year-olds (2.3 percentage points) is associated with a statistically significant 2 percentage point decline in the turnout ratio of under-50 to over-50 voters.

Second, we investigate whether these dynamics (*demand side*) are associated with the typology and the salience of policies proposed by the governments in our sample (*supply side*). Specifically, we focus on policies related to retirement and pensions, likely to resonate with older voters, and unemployment policies, more relevant for the younger ones (Margalit, 2013). We document a clear shift in policy priorities towards the elderly with terms such as "retirement" becoming more salient than "unemployment". Furthermore, when zooming into the content of these retirement policies, a clear pattern emerges: despite the mounting pressure of retirement spending on government finances that would require fiscal restraints, over time and across all the countries of our sample, political parties increase their mentions to increases of welfare spending directed towards retirement issues. On the contrary, discussions on reducing it do not change over time, confirming that office-seeking politicians may opt to focus on those policies that appeal to a broader voter base, considering the demographic shift towards an older electorate. This in turn might be both a trigger and a consequence of the decreasing trend in the propensity to vote among younger voters generating a self-fulfilling prophecy. On one hand, many young voters may feel disillusioned with the political system and may perceive politicians as out of touch with their concerns. On the other hand, this progressive disengagement inevitably makes older cohorts, and their policy priorities, more pivotal and salient in the political debate. Consistently, we find that the shift toward topics more appealing to older workers is most pronounced in countries aging faster where, as previously discussed, younger voter turnout has declined the most. Following the approach used to analyze turnout patterns, we run a long-differences regression of the ratio of pension- to unemployment-related mentions in political manifestos on the change in the share of voters aged 50 to 70. Our results indicate that a one standard deviation increase in this age group share leads to a statistically significant rise of 0.74 standard deviations in pension-related mentions relative to unemployment. This self-reinforcing cycle - where younger voters disengage from politics while political parties increasingly tailor their agendas to older populations - poses a serious risk to democratic representation and legitimacy, ultimately eroding trust in institutions.

This paper creates a bridge between two distinct but connected literatures and approaches. First, higher turnout among older age groups has been a consistent finding in many years of research. Scholars from different disciplines have identified voter's age as an important correlate of propensity to vote, voting decisions, and attitudes towards institutions. In trying to pinpoint the underlying mechanisms, these studies have highlighted many drivers such as, for example, the importance of education, the habituation process, and the family composition as characteristics that make older people more likely to participate in elections (Franklin, 2004; Razin et al., 2004;

Disney, 2007; Goerres, 2007; Goldstone et al., 2012; Dassonneville, 2017; Peterson et al., 2020; Lauterbach & De Vries, 2021; Bello & Galasso, 2021; Goerres & Vanhuysse, 2021; Longuet-Marx, 2024). Second, there is an established a rich literature that, rather than focusing directly on voting, has analyzed the consequence of population aging on political salient and important outcomes such as employment (Bianchi & Paradisi, 2023), healthcare (Razin et al., 2002; Bengtsson & Scott, 2011), tech adoptions (Lancia & Prarolo, 2012) and pensions (Stock & Wise, 1988; Myles & Pierson, 2001; Galasso & Profeta, 2002, 2004).

In this paper, we aim to bring these two pieces of literature together by studying how the recent and stark changes in demographic composition in European countries have led to a structural change in the composition of the pool of voters, the overall propensity to vote, and, consequently, on the content of political agendas. Recognizing these dynamics is essential for understanding the intersection of demographics and electoral politics in aging societies. The remainder of the paper is organized as follows. Section 2 describes the data and the methodology. Section 3 presents the results on the trends of aging and turnout. Section 4 delves into the implications of these trends for the policies discussed in political manifestos. Section 5 concludes.

2 Data and methodology

In our empirical investigation, we combine different data sources.[1] The first analysis exploits individual-level electoral and demographic data, sourced from the European Social Survey (ESS).[2] This dataset is a cross-national survey that collects information on various social, economic, and political aspects of life across Europe. We focus on the sample period from 2002 to 2018 and on those countries that continuously report over this time span.[3] These are Belgium, Finland, France, Germany, Hungary, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland and United Kingdom.[4] Thanks to the ESS we have representative data on if and how European citizens voted in the last 20 years linked to the respondents' demographics, notably including age. Turnout decisions are captured through the question *"Did you vote during the last national election?"*. We use the weight assigned to each respondent by ESS to make the sample representative. Descriptive statistics about the ESS data are in Table A.1. Finally, we complement this information with demographic information on the population of each country from Eurostat.

For the second part of the analysis, we obtain political party manifestos from the Manifesto Project Database (Lehmann et al., 2023).[5] This dataset systematically collects manifestos published by political parties during electoral campaigns or regularly. This information enables us to track

[1] Additional details on these sources and the variables' construction can be found in Appendix A.

[2] https://www.europeansocialsurvey.org.

[3] Similarly to Benedetto et al. (2020), we apply the procedure from Oesch (2006). We focus on waves from 1 to 9 (from 2002 to 2018 every two years).

[4] See Figure A.1 for a map of the countries in our sample.

[5] https://manifesto-project.wzb.eu

the use of specific words related to pension, retirement, and unemployment over time.[6] We focus on the period of interest, 2000-2018, but we also include 1999 and 2020 to have a more balanced sample taking into account the different electoral cycles of the various countries. We group years in 5 "electoral periods": 1999-2003, 2004-2007, 2008-2011, 2012-2015, 2016-2020. We search in each manifesto for the words "pension/retirement" and "unemployment' (in the official language of each country of our sample) and also count the total number of words in each manifesto and the total number of stopwords.[7] This creates four variables for each manifesto: total number of pension- and unemployment-related words, total number of words, and total number of stopwords. To compute the relevance of each topic (e.g. pension, unemployment), we follow a two-step procedure. First, we compute a topic's relevance in a country at a given point in time by taking the ratio between the total number of words related to that topic and the total number of words in the manifestos at the country-electoral-period level. Second, we average the topics' shares across countries for each electoral period to have a summary measure of the relevance of a topic for each period.

Next, we categorize the pension-related mentions distinguishing between those that advocate for a more generous pension system and those that instead promote limitations to the generosity of the pension treatment. To this end, we focus on pension-related mentions, and we study specific pieces of each manifesto about this topic. After finding the word "pension" in a sentence of a manifesto, we select the two subsequent sentences as well. We refer to the resulting collection of sentences as a "segment". We run the *manifestoberta* model to identify the specific sub-topics of each sentence and build an aggregate weight for each sub-topic at the segment level.[8] The most relevant sub-topics in terms of appearance are: "Welfare State Expansion", "Welfare State Limitation", "Economic Goals", "Market Regulation", "Equality", "Labour Groups", and "Economic Planning". Using the segment-level weights, we construct the sub-topic shares in the manifesto.[9] Finally, we employ these shares to decompose the total percentage increase in pension-related mentions over the period 1999-2003 into the various sub-topics. For further evidence about the content of pension-related mentions, we count for words related to early or late retirement ("flexible/early", "late/delay")

[6]Before constructing our measures, we create a corpus of documents and we start the pre-processing procedure by removing numbers, punctuation, hyphens and all the superfluous parts of the text (Ash & Hansen, 2023).

[7]The stopwords are an uninformative component of the content of a manifesto. To identify them, we use the multilingual stopwords list provided by the R package *Quanteda* (Lewis et al., 2004; Benoit et al., 2018, 2021).

[8]The *manifestoberta* model excels in the classification of political texts, with the ability to categorize a diverse array of political discourse according to the comprehensive coding scheme employed by the Manifesto Project, across multiple languages. To create the segment-level weights, we first focus on sub-topics with a weight in the text above 1% and we normalize weights at the sentence level. We then build a weight for each sub-topic at the segment level averaging across sentences in the segment (and giving the same weight to each sentence).

[9]We multiply each of the sub-topic weights at the segment level by the number of pension-related words in the segment and we sum across segments to build a word count for each sub-topic in the manifesto. This procedure ensures that the sum of word counts across sub-topics is equal to the total number of pension words in the manifesto.

within the retirement-related segments of each manifesto, and we quantify how much of the total percentage increase in pension-related words is attributable to late and early retirement.

3 Aging, turnout and disengagement from politics

We begin by analyzing how demographic changes in European countries have impacted the composition of the voter pool. Furthermore, we examine how variations in voting tendencies across different age groups have either mitigated or intensified these demographic changes and how trends in turnout relate to population aging.

3.1 Trends in the population of voters

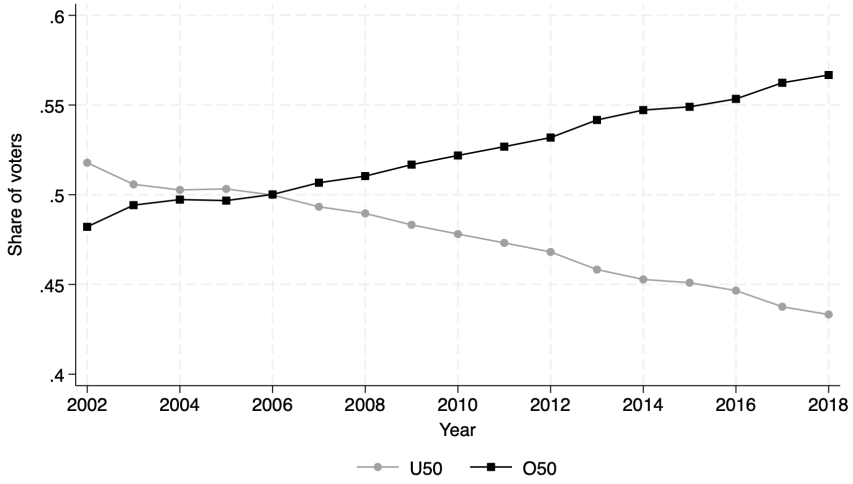
In 2002, voters under the age of 50 constituted the majority, comprising approximately 52% of the voting population (Figure 1). However, by 2006, they were as numerous as voters over the age of 50. Subsequently, in 2018, the final year of our sample, they accounted for less than 45% of the total voters. While this shift aligns with population aging, the fact that the under-50 demographic still made up around 50% of the eligible voters' population in 2018 suggests that the evolution of the propensity to vote among different age groups might have played an important role.

3.2 Turnout propensity over time and across cohorts

To explore the impact of changes in turnout propensities on the voting population's composition, we begin by examining the evolution of the turnout rate across different age groups. We estimate the specification in (3) where we regress a turnout dummy on individual characteristics, an indicator equal to one for individuals older than 50 years old (over 50), and the interaction of the age group indicator with survey waves fixed-effects. Individual characteristics include years of education, gender, income, and country of residency. Figure 2, Panel A shows the coefficients of the interactions. Since the baseline category is the interaction between the over-50 dummy and the first wave, all coefficients can be interpreted as the change in the turnout of a given age group relative to the initial wave. A clear finding is visible: the two age groups follow opposite patterns. While the turnout propensity dramatically decreases by up to 5% for the under-50 group, it increases by 3% for the over-50 group. Both effects are strongly statistically significant. This pattern is confirmed in the raw data. In Figure A.2 Panel A, we uncover a consistent reduction in turnout propensity among those under 50 over the past two decades, leading to a decrease of approximately 3 percentage points — a 5.7% drop relative to the baseline turnout of 53%. Conversely, the turnout among

those over 50 has either remained steady or has slightly increased.[10] In Figure A.2 Panel B, we show that the result remains robust when using the residual turnout propensity after controlling for individual characteristics and, importantly, country of origin.

Figure 1: Share of voters by age group



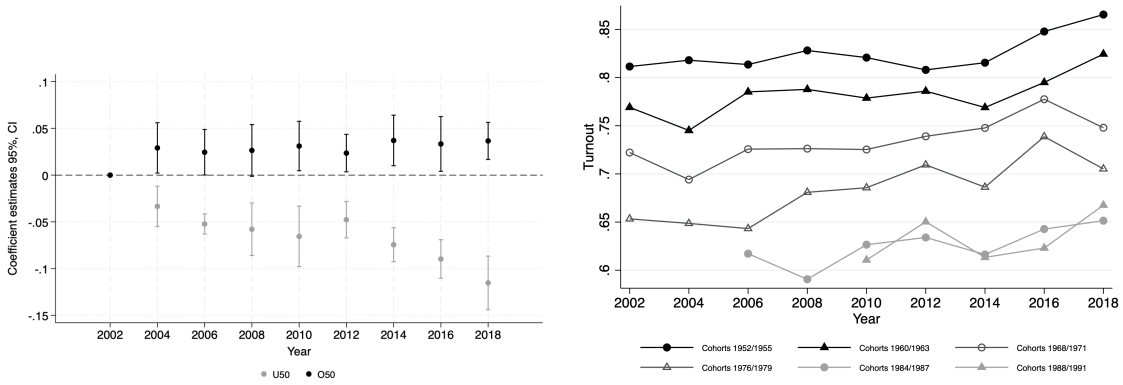
Notes: This figure presents the trends in the share of under-50 and over-50 voters. We measure the share of voters of each age group by interacting their turnout propensity with the population's demographics. We derive the former from the European Social Survey letting it change across cohorts and over time, while demographics come from Eurostat.

The decline in voter turnout propensity among voters under 50 years old can stem from two primary sources. Firstly, it may result from a common decreasing trend within the life cycle of all the young cohorts currently eligible to vote. Alternatively, it could be driven by the progressive entry of cohorts with lower-than-average turnout propensity into the eligible voters' population. In Panel B of Figure 2, we illustrate the evolution of the turnout propensity over the lifecycle of various cohorts, starting from the year when each cohort reached at least 22 years of age. Interestingly, when observed one by one, all cohorts exhibit either a stable or slightly increasing trend, contrary to the aggregate downturn in turnout propensity among those under 50. However, over time, each new cohort of young voters enters the pool of eligible voters with a lower level, that is with a diminished propensity to turnout compared to their older counterparts. Consequently, the decline in turnout propensity among those under 50 (Figure 2 Panel A) can be entirely attributed to the

[10] Figure A.3 provides age-specific changes in turnout propensity comparing the initial and final years of our sample. Over the observed period, turnout has decreased for all ages below 50. In addition, we investigate if changes in turnout have disproportionally affected age groups with a specific political orientation, generating potential consequences for electoral outcomes. Figure A.4 shows the interaction between the change in the turnout of each age group and their initial propensity to vote for left or right. Changes in turnout might favor conservative parties because they reduce the turnout of younger ages who have a higher propensity to vote for the left. However, this effect appears to be small. Because we only observe political preferences conditional on turnout, we cannot run a more comprehensive analysis to understand if the turnout propensity has changed heterogeneously between the subpopulations of voters with different political orientations.

constant overtime influx of new eligible cohorts with lower turnout propensities, replacing older cohorts who transition into the over-50 category. Furthermore, Figure 2 Panel B not only shows a constantly lower turnout propensity for newly eligible cohorts, but also the absence of convergence to previous levels. In other words, newly eligible voters not only exhibit lower turnout the first time they vote, but they also do not catch up over time with the previous cohorts, leading to a constant loss of voters. In Figure A.5 we show that the cross-cohort pattern is present in any country to ensure that this is a widespread phenomenon and that it is not driven by changes in countries' composition over time.

Figure 2: Changes in turnout propensity



(a) *Change in propensity to vote* (b) *Turnout trend by cohorts*

Notes: This figure presents turnout propensity (Panel (a)) for under-50 and over-50 voters, and the evolution of turnout over the lifecycle of some groups of cohorts (Panel (b)). Panel (a) plots the coefficients derived from the regression in (3) where we interact a dummy identifying under-50 and over-50 respondents and a series of dummies identifying each ESS round. We control for individual characteristics such as: years of education, gender, income, and country of residency. We control also for the election year of reference for each country-wave in the survey. The graph represents a change in the probability of turnout for the two age groups relative to the baseline year (2002). Panel (b) plots the turnout trends for 8 different cohort groups. For the youngest groups, we plot the line starting in the year in which the youngest cohort in the group is at least 22. This figure is constructed using data from the European Social Survey.

Given how stable the turnout propensity is over the lifecycle, we infer that this trend of political disengagement among younger cohorts started a long time ago and persisted for several decades. Indeed, our analysis demonstrates how, once the cohort born in the 1960-1963 window became eligible to vote in the late 1970s, it did so with a lower turnout propensity than the previous eligible cohort (born in the 1955-1955 window). These patterns are not only stark but also potentially worrisome, as they indicate that even under the assumption of a more optimistic scenario, where turnout stabilizes at the level observed for individuals born in the 1988-1991 window (i.e., the latest cohort becoming eligible in Figure 2 Panel B), the overall population turnout would still plummet by more than 20 percentage points within a few decades compared to the post-World War II era. This fact raises many concerns about the functioning and health of democratic systems. This perilous cycle of political disengagement implies that elected officials and policies are increasingly decided by a smaller subset of the population. Furthermore, during the slow-moving transition towards lower

aggregate turnout, younger cohorts will consistently be underrepresented in the voter population, exacerbating existing disparities in political participation and therefore further alienating already underrepresented voices.

3.3 Implications for the age composition of voters

We now take stock of the relative contributions of demographic transformations and changes in turnout propensities to the observed composition of voters. Specifically, we employ a decomposition method to analyze the share of voters of each age group. Let $N_{i,t}$ represent the number of individuals in age group i in year t, N_t be the total size of the voting population in that year, and $\rho_{i,t}$ denote the turnout propensity of age group i in year t. We designate a baseline year, denoted by b, which corresponds to 2002 in our analysis (*i.e.*, ESS round 1). The share, $SH_{i,t}$, of voters belonging to age group i in year t can be represented as:

$$
\begin{aligned}
SH_{i,t} = & \underbrace{\frac{N_{i,t}}{N_t}}_{\text{Share if constant turnout}} + \\
& + \underbrace{\left(\frac{\rho_{i,b} N_{i,t}}{\rho_{i,b} N_{i,t} + \rho_{-i,b} N_{-i,t}} - \frac{N_{i,t}}{N_t} \right)}_{\text{Change in share if baseline turnout propensity}} + \\
& + \underbrace{\left(\frac{\rho_{i,t} N_{i,t}}{\rho_{i,t} N_{i,t} + \rho_{-i,t} N_{-i,t}} - \frac{\rho_{i,b} N_{i,t}}{\rho_{i,b} N_{i,t} + \rho_{-i,b} N_{-i,t}} \right)}_{\text{Change in share if observed turnout propensity}}.
\end{aligned} \tag{1}
$$

The first term represents the share of voters from age group i under the assumption of a constant turnout rate across age groups. The second term projects how this share would change if we considered the demographic composition of year t and the propensity of age group i to turnout, as measured in the baseline year b. The last term measures how one should adjust this share to capture changes in the propensity of age group i to turnout between years b and t. Hence, the combined effect of the last two terms reflects how heterogeneous propensities to turnout across age groups and over time contribute to the difference between the observed share and a scenario with constant turnout rates across ages. In other words, it represents the deviation from a homogeneous turnout propensity scenario.

The decomposition delivers three key findings.[11] First, if all age groups had an identical propensity to turnout (the first component in (1)), the under-50 group would have only become the minority of voters in 2017. Thus, varying propensities to turnout played a significant role in shaping the observed trend. Second, the heterogeneous propensity to turnout across age groups during the initial year of the sample, combined with demographic changes, explains a substantial part of the difference between the observed trend and the one projected under a scenario with constant

[11] Figure A.6 graphically illustrates the components of our decomposition.

turnout across ages. Precisely, using the propensities to turnout observed in 2002, we would have predicted the under-50 group to become the minority in 2008, rather than in 2018. This is due to the disproportionate increase in the population of older cohorts with a higher propensity to vote. Third, we discover that changes over time in the propensity to turnout of under 50 had a notable impact on voting shares. Once we consider the decrease in their turnout propensity, under 50 became a minority among voters in 2005, three years earlier than if the turnout propensity had remained constant. In conclusion, the heterogeneous propensity to turnout across ages and its evolution have amplified the effects of the demographic trend on the composition of the voting population, leading to an older pool of voters than expected. In the next Subsection, we investigate whether population aging might have triggered in the very first place the over time change in the propensity to vote across cohorts.

3.4 Linking Turnout Patterns with Population Aging

We now link turnout patterns across cohorts with population aging. To do so, we estimate the following first difference specification using data for the period 2002-2018:

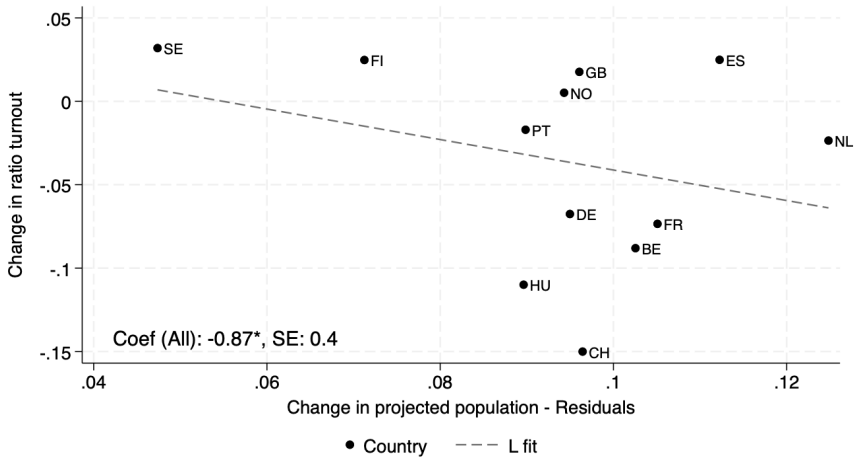
$$\Delta Y_c = \alpha + \beta \tilde{\Delta} \text{SPop}^{50-70} + \gamma GPD_c + \varepsilon_c, \tag{2}$$

where Δ indicates a 20-year change in any given variable that allows to control for time-invariant country-level unobservables. Y_c represents the ratio between the turnout rate of under 50 and the turnout rate of over 50. Our variable of interest is the change in the share of older voters between 50 and 70 years of age. This might of course be influenced by migration responses as well as population changes that are endogenous to shocks that might occur in the 20-year period considered and might thus confound our estimates. To avoid this, we project the change in the share of 50 to 70-year-old voters using the initial (at baseline) population structure. Specifically, we use $\tilde{\Delta}\text{SPop}^{50-70} = \text{SPop}_{2001}^{30-50} - \text{SPop}_{2001}^{50-70}$, that is the difference between the share of 30-50 voters in year 2001 and the share of population between 50 and 70 years of age in the same year. The latter difference captures how the share of 50-70 would have changed over our analysis period as a consequence of the natural aging of the voters who were already registered in 2001, the baseline year of our sample. We also allow for different trends predicted by real GDP and captured by the parameter γ.

We plot the results of this regression in Figure 3 and we find a negative and significant (at 10% level) relationship between the population aging and the propensity of younger individuals to vote relative to older ones. More specifically, a 2.3 percentage point increase (1 SD) in the projected share of 50-70 voters translates into a reduction of 2 percentage points in the turnout ratio between younger and older voters. This suggests that countries experiencing more pronounced population aging have not only undergone a mechanical shift in their voter base but have also faced a deeper decline in political engagement among younger voters. As illustrated in Figure 2 Panel B,

successive cohorts have exhibited progressively lower turnout levels between the late 1970s and the early 21st century. Interpreting our cross-country regression in light of this fact, we conclude that the countries that have aged the most over the past 40 years are also those that witnessed the most significant disengagement of younger cohorts during the final two decades of the 20th century. In the next Section, we deep dive into one potential mechanism of this phenomenon, *i.e.* changes in the policy priorities triggered by population aging.

Figure 3: Linking turnout patterns with population aging



Notes: This Figure shows the relationship between population aging and the turnout rate of younger voters relative to older ones. We show this relationship in a scatterplot based on the specification in (2). The x-axis shows the residual change in the projected share of 50-70 voters. The latter is $\tilde{\Delta}\text{SPop}^{50-70} = \text{SPop}^{30-50}_{2001} - \text{SPop}^{50-70}_{2001}$, *i.e.* the difference between the share of 30-50 voters in year 2001 and the share of population between 50 and 70 years of age in the same year. We regress $\tilde{\Delta}\text{SPop}^{50-70}$ on GDP per capita and add to its residuals the average predicted $\tilde{\Delta}\text{SPop}^{50-70}$ to "re-center" the residuals and provide a meaningful range to the x-axis. The y-axis represents the ratio between the turnout rate of under 50 and the turnout rate of over 50. Each dot on the graph represents a country in our sample and the fitline is the OLS fit. We add to the graph the point estimate of the OLS in the specification (2) and its robust standard error.

4 The changing content of the political agenda

Thus far, we have focused our attention on the *demand* side of the social contract, documenting a shift toward an older voter demographic and a progressive and dramatic disengagement from politics of younger voters' cohorts. This section shifts our focus to the *supply* side, asking whether these trends align with changes in the agenda of political representatives. We assess party agendas by examining manifestos, concentrating on two distinct sets of topics that should appeal to different age groups. Specifically, we scrutinize retirement- and pension-related themes to capture messages tailored to older voters, while we use unemployment as a representative issue of greater interest to younger working-age individuals.

In Figure 4, we show the trajectory of the two topics over the past two decades, measured as the proportion of topic-related words relative to the total words in political manifestos. We detail

the procedure in Appendix A.1. Pension-related words see a nearly 25% increase in their share over 16 years. Over the same period, the term unemployment progressively diminishes in prominence, experiencing a 20% reduction in its share by 2015 and a substantial 60% decrease over the entire period of analysis. This shift in manifesto content aligns with the aging of the voter population, highlighting a transition toward issues more appealing to older demographics. Notably, this pattern seems to be independent of political ideology. As depicted in Figure A.7, both right and left-wing parties exhibit an uptick in mentions of pension-related topics and a decline in discussions related to unemployment. However, as one might expect, while left parties display a greater increase in pension mentions, their reduction in coverage of unemployment-related issues is less pronounced.

To expand and assess the robustness of our findings, we conduct additional analyses. First, we address concerns regarding whether shifts in the structure of manifestos could influence the prevalence of either topic. Although we documented trends using proportions of total words, which should make them robust to changes in manifesto length and composition, Figure 4 juxtaposes the trends of the two topics with that of stopwords. This placebo topic exhibits a consistently flat trend over time, confirming that changes in manifesto length or structure do not mechanically drive our results.

Secondly, one might worry that the increased prevalence of pension-related topics is a response to the mounting pressure of social security spending on government finances rather than a deliberate shift in the political agenda to appeal to an older voter base. To address this concern, we run the *manifestoberta* model (Burst et al., 2023) to distinguish specific topics in the retirement sections of each manifesto. In Figure 5, we observe a significant increase in the share of the *"Welfare State Expansion"* topic over the total number of retirement words, while the *"Welfare State Limitation"* remains quite steady.[12] We run a similar analysis, presented in Appendix Figure A.9, by searching for specific words on late and early/flexible retirement.[13] In this case, we observe a rise in the mentions of early retirement, which is typically associated with larger government spending, while mentions of late retirement remain unchanged or negatively impacted. If the sustainability of public finances were the primary driver, one would anticipate increased discussions about welfare state limitations and late retirement, a prevalent policy to address rising social security spending (OECD, 2020). Contrary to this expectation, despite the widespread adoption of higher full retirement ages that limit welfare state spending, political narratives emphasize options for earlier retirement and welfare state expansions. We interpret this as politicians strategically steering away from policies that may negatively impact older voters, focusing instead on reforms that alleviate the burden of

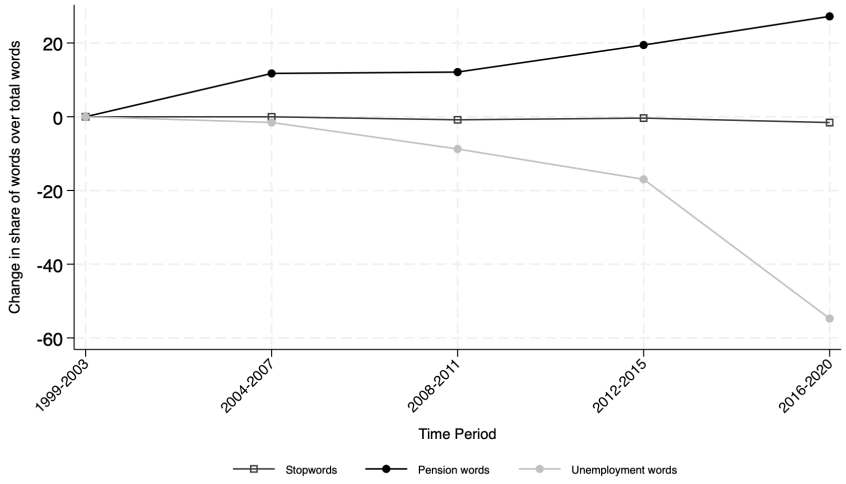
[12]To decompose the total increase in pension-relate mentions, we divide the over-time change in the share of a sub-topic over the total words in the manifesto by the initial share of pension words over the total number of words of the manifesto. We present in Appendix Figure A.8 a more precise description of the aforementioned sub-topics and the same representations for other sub-topics that we identify in the retirement part of the manifestos.

[13]To this end, for each of the two categories we measure the over-time change in their share over the total manifesto's words and divide it by the baseline share of pension-related words over the total manifesto's words.

social security adjustments for this increasingly pivotal voter cohort.

Thirdly, we investigate whether the decrease in mentions regarding topics related to unemployment could be attributed to a general rise in the overall number of discussed topics within the average manifesto. If there is an increase in the number of topics, the proportion of each topic mechanically diminishes. Thus, our objective is to discern whether unemployment exhibits a distinct pattern compared to a typical topic or if its decline is merely a consequence of the proliferation of topics addressed in political manifestos. To this end, in Figure A.10, we juxtapose the trend in unemployment with that of two other topics: "EU" and "taxes".[14] While the latter topics demonstrate relatively stable trends over the analysis period, the mentions of unemployment exhibit a steady decline. This suggests that the diminishing mentions of unemployment reflect a redirection of political attention away from this issue.

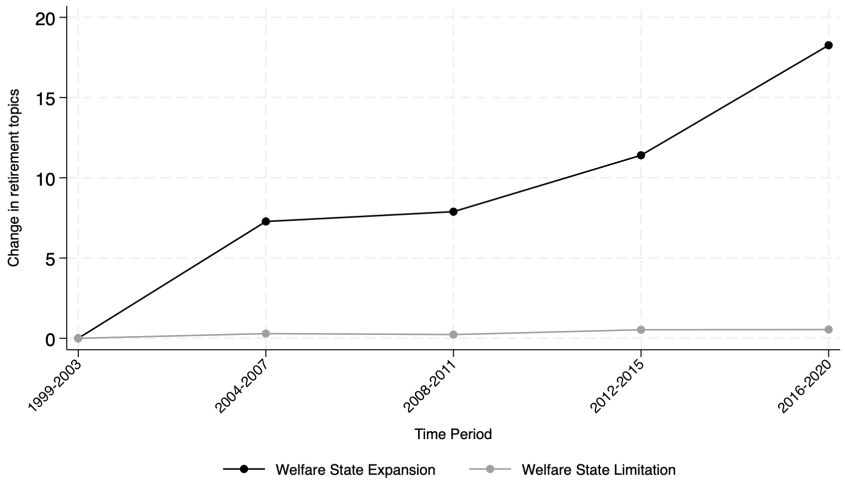
Figure 4: Policies discussed in manifestos - Pension and unemployment



Notes: This figure illustrates the changing frequencies of words related to "pension", "unemployment", and "stopwords" in political party manifestos across various electoral cycles, in comparison to the baseline period 1999-2003. This analysis uses data from the Manifesto Project Database. We explain in detail the information available in this database in the Data section. We construct this figure by counting the occurrences of "unemployment", "pension", and stopwords in the manifestos, alongside the total word count. The dataset is then organized at the electoral cycle level, which typically spans 4-5 years, to create a more structured panel. We then calculate the shares by dividing the counts of "unemployment", "pension", and stopwords by the total word count in the manifestos for each electoral cycle.

[14]We create these counts using the following words for the two topics: 'European Union/Europe', and 'taxation/tax'.

Figure 5: Policies discussed in manifestos - Pension: Welfare State Expansion vs Limitation

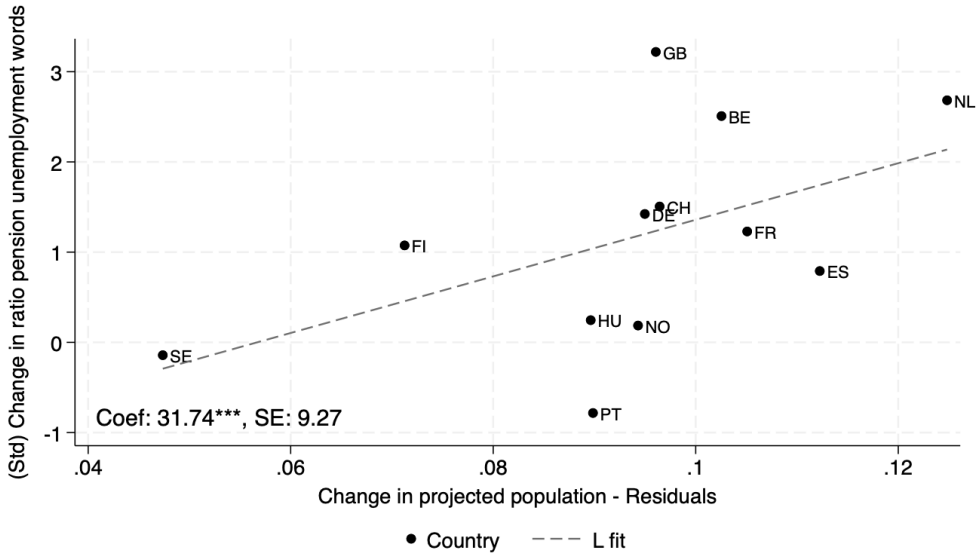


Notes: This figure delves into the specific language used in discussing retirement within the pension sections of political party manifestos. This figure contrasts the frequency of topics associated with welfare state expansions against those related to welfare state limitation, set against a baseline period for comparison. In constructing this figure, we first segment the manifesto text to focus specifically on sentences surrounding the mentions of "pension." We identify the word "pension" in a sentence, and we select the two subsequent sentences as well. If two consecutive sentences contain a mention of the word "pension," we select the two sentences after the last one that present the mention of the word "pension." We refer to the resulting collection of sentences as a "segment". We then run the *manifestoberta* model to identify the specific sub-topics of each sentence. We identify sub-topics with a weight in the text above 1% and we re-scale these weights on the identified sub-topics to make sure that they sum to 1 within a sentence. The two most relevant topics we identify in terms of shares are: "Welfare state expansion" and "Welfare state limitation". We then aggregate the sub-topic classification at the segment level, building sub-topic shares for each sub-topic that we have identified in the sentences included in the segment. Next, we multiply each of these sub-topic shares by the number of pension-related words in the segment and we sum across segments to build a word count for each sub-topic in the manifesto. This procedure ensures that the sum of word counts across sub-topics is equal to the total number of pension words in the manifesto. We then decompose the total percentage increase in pension-related mentions over the period 1999-2003 into the various subtopics. To this end, we divide the over-time change in the share of a sub-topic over the total words in the manifesto by the initial share of pension words over the total number of words of the manifesto. By comparing these shares against those from the baseline period, the figure provides a temporal perspective on the emphasis placed on different retirement concepts within political discourse. The baseline period is 1999-2003.

4.1 Linking Changes in Political Agendas with Population Aging

Similarly to subsection 3.4, we now investigate whether countries that have aged the most are those where the agenda has shifted more prominently in favor of older workers. To do so, we estimate specification (2) using as an outcome the change in the ratio between pension and unemployment-related words. We express this change for each country in terms of the standard deviations of that country itself. Figure 6 reports the results of our analysis and shows a strong and positive relationship (significant at the 1% level) between the change in the projected 50-70 population and the change in the ratio of pensions and unemployment words. The effect is sizable in magnitude with a 2.3pp increase in the share of 50-70 (1 SD) associated with an increase of 0.739 standard deviations in the ratio between pensions and unemployment words.

Figure 6: Linking political agendas with population aging



Notes: This figure shows the relationship between population aging and the content of political agendas. We show this relationship in a scatterplot based on the specification in (2). The x-axis shows the residual change in the projected share of 50-70 voters. The latter is $\tilde{\Delta}\text{SPop}^{50-70} = \text{SPop}_{2001}^{30-50} - \text{SPop}_{2001}^{50-70}$, *i.e.* the difference between the share of 30-50 voters in year 2001 and the share of population between 50 and 70 years of age in the same year. We regress $\tilde{\Delta}\text{SPop}^{50-70}$ on GDP per capita and add to its residuals the average predicted $\tilde{\Delta}\text{SPop}^{50-70}$ to "re-center" the residuals and provide a meaningful range to the x-axis. The y-axis represents the ratio between the number of pension-related and unemployment-related mentions found in the political manifestos. For each country, we standardize this ratio using the country-specific mean and standard deviation. Each dot on the graph represents a country in our sample and the fitline is the OLS fit. We add to the graph the point estimate of the OLS in the specification (2) and its robust standard error.

Discussion. Our analysis provides clear evidence of a pronounced shift in the political agenda across European countries, increasingly prioritizing issues that resonate with older voters, particularly those related to retirement policies. While the data convincingly demonstrate this trend, the precise causal relationship between voter demographics and political supply remains an open question. Specifically, it is unclear whether this transformation is purely a response to the growing proportion of older voters or if it has, in turn, contributed to the progressive disengagement of younger cohorts by deprioritizing issues relevant to them.

Although further research is needed to disentangle these dynamics, one crucial insight stands out: the political disengagement of younger voters is not a recent phenomenon but rather a long-standing process that has persisted for at least five decades. On one hand, this suggests that the decline in youth participation predates the shifts in political platforms documented in this study. On the other hand, however, these shifts in policy priorities may have deepened the disengagement of younger generations. The interplay between these factors—demographic change, shifting political priorities, and evolving voter behavior—raises important concerns about the long-term implications for democratic representation and political legitimacy. Addressing these challenges requires a concerted effort to ensure that the political system remains responsive to the interests of all age groups, preventing the reinforcement of a self-perpetuating cycle of disengagement and

underrepresentation.

5 Conclusion

Population aging is not 'only' a demographic problem. In this paper, we establish three key findings. First, we show that over the past two decades, individuals under 50 have become a minority within the voter population—a shift driven not only by demographic trends but also by a declining turnout propensity among younger voters, contrasted with increasing participation among older age groups. Second, we document how this decline in turnout has unfolded gradually across cohorts: each new generation of eligible voters has entered with lower turnout rates than its predecessors and has failed to converge to previous levels over its lifecycle. Notably, this disengagement among younger voters has been more pronounced in countries experiencing faster population aging. Third, we demonstrate that these demographic and behavioral shifts have coincided with a transformation in the political agenda. Analyzing political manifestos, we find a marked shift toward topics that appeal to older voters, particularly retirement policies. As with turnout trends, this shift has been more pronounced in countries with greater population aging.

We see these results as relevant for the well functioning of democratic societies, where political power is determined by voting. The demographic shift naturally inclines politicians to prioritize policies that cater to the interest of older voters, as they represent the majority of the electorate. This creates a self-reinforcing cycle, as it might result in policies that may further alienate younger voters, leading to a lower turnout among this demographic. Hence, the nexus between population aging, lower turnout among young voters, and political prioritization of older voters should be at the center of a research agenda because it poses significant challenges to democratic governance and representation. Breaking this vicious circle requires proactive efforts from various stakeholders and a multifaceted approach that combines social, economic, healthcare and migration policies.

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A Online Appendix

A.1 Details on data and variables construction

ESS: Voting decisions are captured through questions on turnout and party preferences. Specifically, the survey questions are: *Did you vote during the last national election?* and *Which party did you vote for in the last national election?*. We classify parties along two dimensions: political leaning (left or right), and whether they are populist or not according to the Chapel Hill Expert Survey (Bakker et al., 2015; Jolly et al., 2022).

Manifesto Project: Before constructing our measures, we create a corpus of documents and we start the pre-processing procedure by removing numbers, punctuation, hyphens, and all the superfluous parts of the text (Ash & Hansen, 2023). In addition to the measures discussed in the main text, we count the total number of stopwords. The stopwords are an uninformative component of the content of a manifesto, and their frequency should not vary across manifestos and over time. To identify them, we use the multilingual stopwords list provided by the R package *Quanteda* (Lewis et al., 2004; Benoit et al., 2018, 2021). For our robustness checks, we also compute the total number of times "EU" and "taxes" related words are used in each manifesto. We use the following words for the two topics: 'European Union/Europe', and 'taxation/tax'.

After identifying the word "pension" in a sentence of a manifesto, we select the two subsequent sentences as well.[15] We refer to the resulting collection of sentences as a "segment". We then run the *manifestoberta* model to identify the specific sub-topics of each sentence.[16] We identify sub-topics with a weight in the text above 1% and we re-scale these weights on the identified sub-topics to make sure that they sum to 1 within a sentence. We then aggregate the sub-topic classification at the segment level, building sub-topic shares for each sub-topic that we have identified in the sentences included in the segment.[17] Next, we multiply each of these sub-topic shares by the number of pension-related words in the segment and we sum across segments to build a word count for each sub-topic in the manifesto. This procedure ensures that the sum of word counts across sub-topics is equal to the total number of pension words in the manifesto. We then decompose the total percentage increase in pension-related mentions over the period 1999-2003 into the various subtopics. To this end, we divide the over-time change in the share of a sub-topic over the total

[15] If two consecutive sentences contain a mention of the word "pension," we select the two sentences subsequent to the last one that presents the mention of the word "pension."

[16] This model is built upon the foundation of multilingual XLM-RoBERTa large models, which underwent fine-tuning using all annotated statements within the Manifesto Corpus, encompassing over 1.5 million annotated statements to date. Demonstrating robust performance, the model excels in the classification of political texts, with the ability to categorize a diverse array of political discourse according to the comprehensive coding scheme employed by the Manifesto Project, across multiple languages. Leveraging its capabilities, the model facilitates the categorization of various text types into 56 distinct political topics according to the Manifesto Project's coding scheme.

[17] We obtain these shares giving the same weight to each sentence.

words in the manifesto by the initial share of pension words over the total number of words of the manifesto.

For further evidence about the content of pension-related mentions, we count for words related to early or late retirement ("flexible/early", "late/delay") within the retirement-related segments of each manifesto. We compute for each segment the share of late- and early-retirement-related words out of the total retirement words with one mention of early or late retirement.[18] Then, we multiply these shares by the number of pension-related words in the segment and we sum across segments to obtain the total number of retirement-related words that belong to the late and early retirement categories. We then quantify how much of the total percentage increase in pension-related words is attributable to late and early retirement. To this end, for each of the two categories we measure the over-time change in their share over total manifesto's words and divide it by the baseline share of pension-related words over total manifesto's words.

A.2 Details on the specification

To control for differences in observable characteristics in the analysis of changes in the propensity to turnout, we run the following specification:

$$y_{i,t} = \lambda \text{Under50}_{i,t} + \beta_t^{U50} \text{Under50}_{i,t} \times \text{ESS Round}_t + \beta_t^{O50} \text{Over50}_{i,t} \times \text{ESS Round}_t + \delta_c + \mathbf{X}_{i,t} + \epsilon_{it}. \tag{3}$$

The equation outlines the regression model employed in Panel (a) of Figure 2. This regression model employs a binary outcome variable, $y_{i,t}$, denoting whether the respondent i voted in the last national election at time t. Dummy variables $\text{Under50}_{i,t}$ and $\text{Over50}_{i,t}$ indicate if the respondent i is under or over 50 years old at time t, respectively. We further include dummy variables representing each European Social Survey (ESS) round, with the initial round (2002) serving as the reference category, which we interact with dummy variables $\text{Over50}_{i,t}$ and $\text{Under50}_{i,t}$. We control for country fixed effects (δ_c), along with individual-level covariates such as years of education, income, and gender ($\mathbf{X}_{i,t}$).[19] Standard errors are clustered at the country-ESS round level. The coefficients β_t^{U50} and β_t^{O50} measure the change in the propensity to evade relative to the baseline year (2002) of under-50 and over-50 voters, respectively. In Figure 2 Panel (a), we plot the vectors of these coefficients for each age cohort with their respective confidence interval.

[18] If there is no mention of early or late retirement in a segment, we set to zero both shares for that segment.

[19] We also link each country's election years to the corresponding ESS waves, ensuring that there is a clear election year of reference for each country-wave in the survey. We incorporate this election year variable as a control.

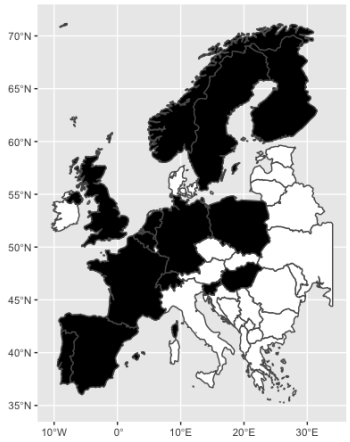
A.3 Decomposing turnout propensity by party

We study how changes in turnout at different ages might have affected the share of votes for left and right by using the following decomposition:

$$\text{Change in turnout propensity wrt Average - By party} = \underbrace{\frac{\rho^{\text{left}}_{a,t}}{\rho^{\text{left}}_{t}} \cdot \left(\frac{\rho^{\text{turn}}_{a,t'}}{\rho^{\text{turn}}_{t'}} - \frac{\rho^{\text{turn}}_{a,t}}{\rho^{\text{turn}}_{t}} \right) \cdot s_{a,t}}_{\text{Change in turnout propensity wrt Average}} \quad . \quad (4)$$

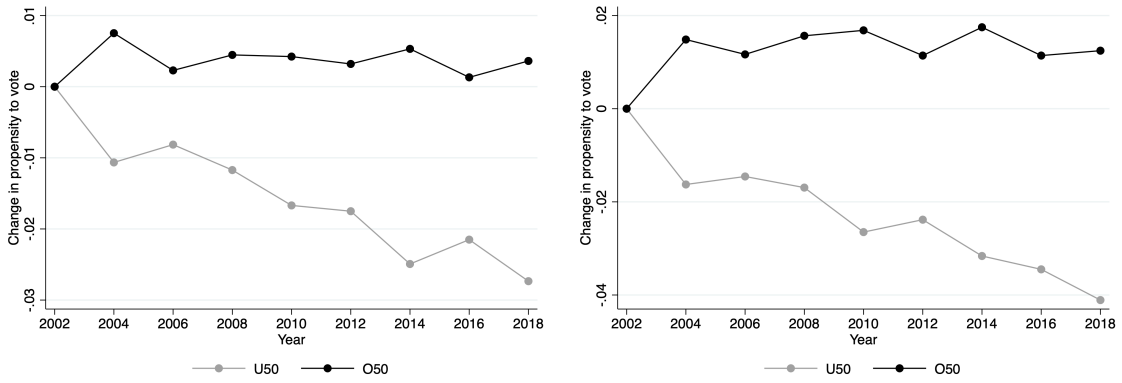
The equation examines if changes in turnout have disproportionally affected age groups with a specific political orientation. The variables $\rho^{\text{left}}_{a,t}$ and $\rho^{\text{vote}}_{a,t}$ measure the propensities of age group a in year t to vote for left and to turnout, respectively. The analogous variables ρ^{left}_{t} and ρ^{vote}_{t} measure the same propensities in the full population rather than in a specific age group. $s_{a,t}$ is the share of respondents in age cohort a at time t over the total number of respondents at time t The equation quantifies if the overtime change in the propensity to the turnout of a given age group can favor left parties based on the baseline (time $t < t'$) propensity of that age group to vote for left ($\frac{\rho^{\text{left}}_{a,t}}{\rho^{\text{left}}_{t}}$). Figure A.4 shows the quantification of this equation for both left and right when the baseline year is 2002 and the year t' is 2018.

Figure A.1: Analysis sample



Notes: This map shows (in black) the countries present in our sample of analysis: Belgium, Finland, France, Germany, Hungary, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom

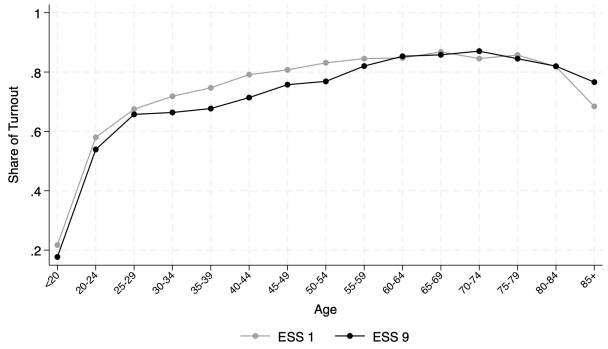
Figure A.2: The evolution of the turnout propensity



(a) *Average turnout* (b) *Residual average turnout*

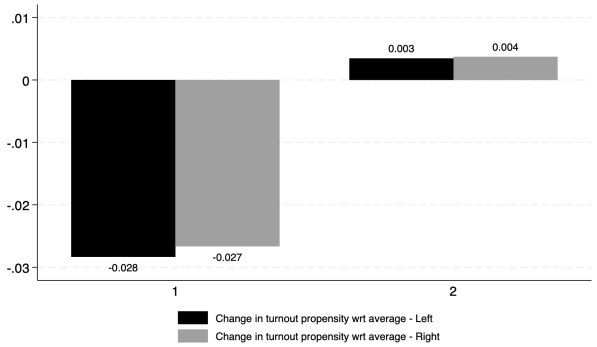
Notes: This figure presents the turnout propensity in the raw data (Panel (a)) and the residual turnout propensity predicted from a regression controlling for individual characteristics, country FEs, and ESS FEs. Individual characteristics include years of education, gender, income, country, and ESS round (Panel (b)). Each line depicts the change in turnout propensity relative to the baseline year (2002) for a given age group. The age groups considered are under-50 and over-50 voters. This figure is constructed using data from the European Social Survey.

Figure A.3: The evolution of the turnout by age



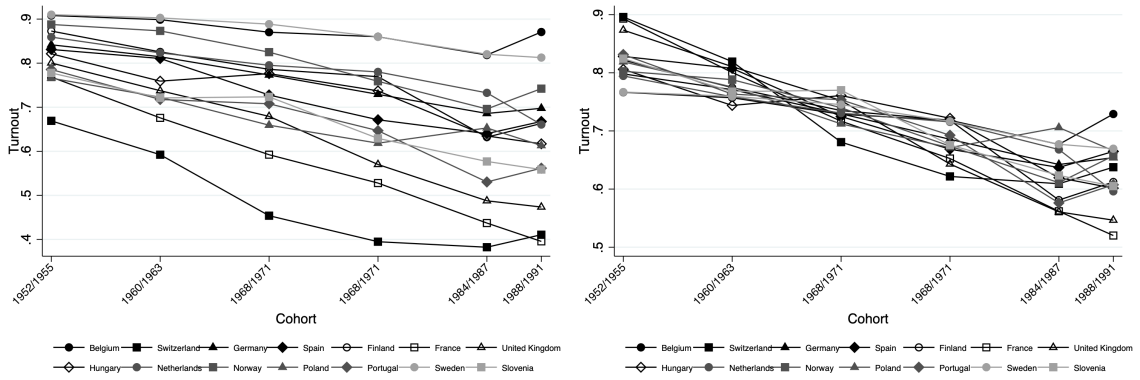
Notes: This figure describes how the voting behavior of various age groups has evolved over 16 years. It depicts voter turnout across different age groups (in 5-year bins), comparing data from two periods: a baseline period (ESS 1; i.e., 2002) and a final period (ESS 9; i.e. 2018). This figure is constructed using data from the European Social Survey.

Figure A.4: Change in turnout propensity and potential consequences on party votes



Notes: This figure investigates if changes in turnout have disproportionally affected age groups with a specific political orientation, generating potential consequences for electoral outcomes. It shows the interaction between the change in the turnout of each age group and their initial propensity to vote for left (in grey) or right (in black). We detail this formula in (4). This figure is constructed using data from the European Social Survey.

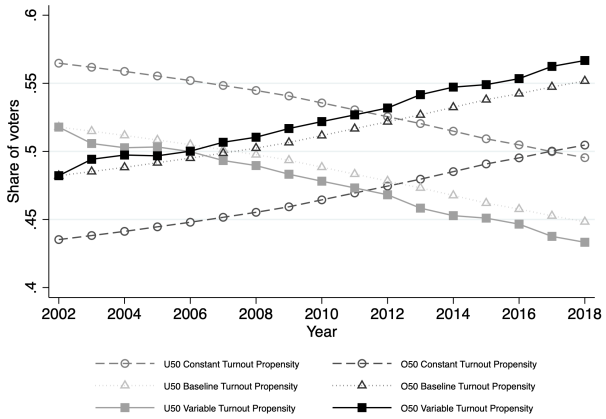
Figure A.5: Turnout by country and cohort



(a) *Turnout by country* (b) *Turnout by country - Residuals*

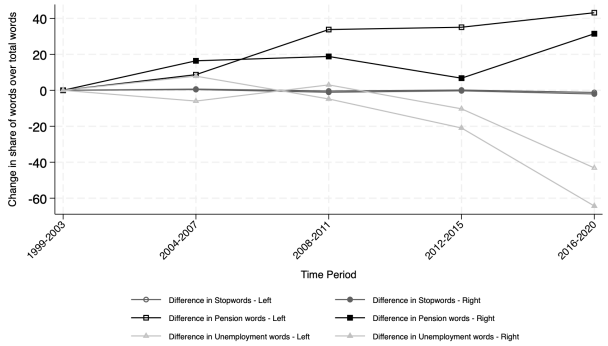
Notes: This figure presents the turnout propensity across cohorts for each country in our sample (Panel (a)). Each line corresponds to a country and depicts the evolution of average turnout across cohort groups (on the x-axis). For each country-cohort combination, the turnout is computed over all the years in the sample, i.e. over all ages at which the cohort is observed. Panel (b) repeats the same exercise using the residual turnout propensity predicted from a regression controlling for the country of the respondent fixed-effects (Panel (b)). This figure is constructed using data from the European Social Survey.

Figure A.6: Turnout trends - Counterfactuals



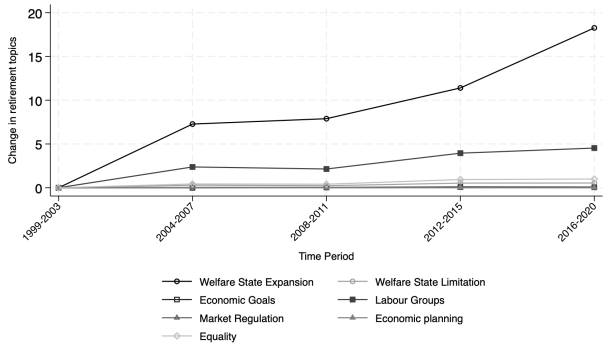
Notes: This figure presents the decomposition of voter turnout trends derived from Equation 1, illustrating the impact of varying turnout propensities across different age groups. The dotted lines show what would have been the evolution of the shares of under-50 and over-50 voters with a constant turnout rate across ages. They visualize a hypothetical scenario where all age groups have identical turnout propensities. This component of the decomposition depicts the pure effect of demographic changes. The lines with triangles project how the share of each age group changes when considering both the demographic composition of a given year t and the propensity of each age group to turnout as measured in the baseline year (2002). This component reflects the combined effect of demographic shifts and the turnout tendencies observed in 2002. Finally, the squared lines show an adjustment for changing turnout propensity: they adjust the share of each age group to account for changes in their turnout propensity between the baseline year b (2002) and a given year t. This component highlights the impact of evolving turnout behaviors within each age group, illustrating how these changes contribute to the deviation from a scenario of homogeneous turnout propensity. This figure is constructed using data from the European Social Survey for turnout rates and demographic composition data from Eurostat.

Figure A.7: Policies discussed - Pension and Unemployment by party



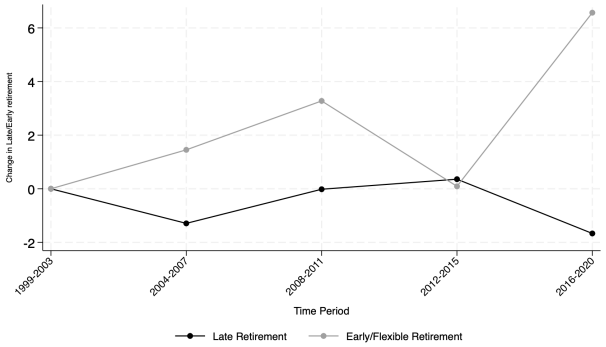
Notes: This figure shows the over time variation in the share of words related to "pension", "unemployment", and "stopwords" over the total words reported in political party manifestos across various electoral cycles. The baseline period is 1999-2003. The figure explores whether the results of Figure 2 are heterogeneous by political party. Using the Chapel Hill Expert Survey and the political family assigned by the Manifesto Project Database, we divide each party between "right" or "left" leaning. The dataset is then organized at the electoral cycle-political party level. For each electoral cycle and party group ("right" or "left"), we then calculate the shares by dividing the counts of "unemployment", "pension", and stopwords by the total word count in the manifestos for each electoral cycle. The baseline period is 1999-2003.

Figure A.8: Policies discussed - Pension: classification by sub-topics



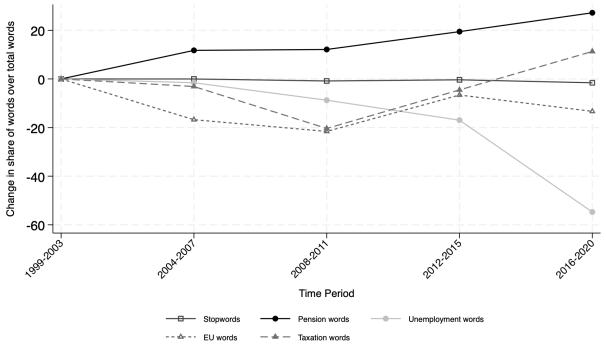
Notes: This figure delves into the specific language used in discussing retirement within the pension sections of political party manifestos. This figure contrasts the frequency of topics associated with welfare state expansions against those related to welfare state limitation and other sub-topics, set against a baseline period for comparison. In constructing this figure, we first segment the manifesto text to focus specifically on sentences surrounding the mentions of "pension." We identify the word "pension" in a sentence, and we select the two subsequent sentences as well. If two consecutive sentences contain a mention of the word "pension," we select the two sentences subsequent to the last one that presents the mention of the word "pension." We refer to the resulting collection of sentences as a "segment". We then run the *manifestoberta* model to identify the specific sub-topics of each sentence. We identify sub-topics with a weight in the text above 1% and we re-scale these weights on the identified sub-topics to make sure that they sum to 1 within a sentence. The most relevant in terms of appearance are: "Welfare State Expansion", "Welfare State Limitation", "Economic Goals", "Market Regulation", "Equality", "Labour Groups", and "Economic Planning". We then aggregate the sub-topic classification at the segment level, building sub-topic shares for each sub-topic that we have identified in the sentences included in the segment. Next, we multiply each of these sub-topic shares by the number of pension-related words in the segment and we sum across segments to build a word count for each sub-topic in the manifesto. This procedure ensures that the sum of word counts across sub-topics is equal to the total number of pension words in the manifesto. We then decompose the total percentage increase in pension-related mentions over the period 1999-2003 into the various subtopics. To this end, we divide the over-time change in the share of a sub-topic over the total words in the manifesto by the initial share of pension words over the total number of words of the manifesto. The baseline period is 1999-2003.

Figure A.9: Policies discussed - Pension: Late vs Early Retirement



Notes: This figure delves into the specific language used in discussing retirement within the pension sections of political party manifestos. In constructing this figure, we first segment the manifesto text to focus specifically on sentences surrounding the mentions of "pension." We count for words related to early or late retirement ("flexible/early", "late/delay") within the retirement-related segments of each manifesto. We compute for each segment the share of late- and early-retirement-related words out of the total retirement words with one mention of early or late retirement. Then, we multiply these shares by the number of pension-related words in the segment and we sum across segments to obtain the total number of retirement-related words that belong to the late and early retirement categories. We then quantify how much of the total percentage increase in pension-related words is attributable to late and early retirement. To this end, for each of the two categories we measure the over-time change in their share over total manifesto's words and divide it by the baseline share of pension-related words over total manifesto's words. The baseline period is 1999-2003.

Figure A.10: Policies discussed - Robustness checks on topics prevalence



Notes: This figure shows the over time variation in the share of words related to "pension", "unemployment", "European Union/Europe", "taxation/tax" and "stopwords" over the total words reported in political party manifestos across various electoral cycles. The baseline period is 1999-2003. This analysis utilizes data from the Manifesto Project Database. We construct this figure by counting the occurrences of "pension", "unemployment", "European Union/Europe", "taxation/tax" and "stopwords" in the manifestos, alongside the total word count. The dataset is then organized at the electoral cycle level, which typically spans 4-5 years, to create a more structured panel. We then calculate the shares by dividing the counts of "pension", "unemployment", "European Union/Europe", "taxation/tax" and "stopwords" by the total word count in the manifestos for each electoral cycle. The figure displays these shares for each period relative to the baseline period (1999-2003).

Table A.1: ESS: Summary Statistics

Variables	Obs	Mean	SD	Min	Max
Age	226,271	49.38	17.90	18	90
Over 50	226,271	0.49	0.50	0	1
Voted	226,271	0.74	0.44	0	1
Voted Left	167,797	0.39	0.48	0	1
Voted Right	167,797	0.47	0.49	0	1
ESS round	226,271	4.91	2.55	1	9

Notes: This table reports some summary statistics for the data we use from the European Social Survey. We focus on the subset of countries for which the data is available throughout the entire period, from the first ESS wave to the last available ESS 9 (2018): Belgium, Finland, France, Germany, Hungary, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. The variable *Age* represents the age of each respondent (we drop all respondents younger than 18 and older than 90). From this variable, we create a dummy variable taking value 1 if the individual is above 50 years old and 0 otherwise (*Over 50*). Variables *Voted* is a dummy variable equal to one if an individual has voted, *Voted Left* is a dummy variable equal to 1 if an individual has voted for the left and *Voted Right* is a dummy variable equal to one if an individual has voted for the right. To construct these variables, we focus on two questions on voting behavior: *Did you vote during the last national election?*; *Which party did you vote for during the last national election?*. We classify each party by political leaning (left or right) following the Chapel Hill Expert Survey Jolly et al. (2022).

Table A.2: Differences in trend and propensity turnout by country

	Under 50		Over 50	
	(1)	(2)	(3)	(4)
Country	Diff in share of voters (2018-2002)	Diff in propensity to vote (2018-2002)	Diff in share of voters (2018-2002)	Diff in propensity to vote (2018-2002)
Belgium	-0.0825	-0.0386	0.0825	0.0152
France	-0.1005	-0.0503	0.1005	-0.0049
Germany	-0.1044	-0.0277	0.1044	0.0105
Hungary	-0.0757	-0.0394	0.0757	0.0246
Netherlands	-0.1000	-0.0141	0.1000	0.0068
Norway	-0.0730	-0.0050	0.0730	-0.0066
Poland	-0.1101	-0.0471	0.1101	0.0172
Slovenia	-0.1220	-0.0356	0.1220	0.0064
Spain	-0.0727	0.0001	0.0727	-0.0029
United Kingdom	-0.0354	-0.0131	0.0354	-0.0100

Notes: This table shows specific country trends in the share of under-50 and over-50 voters (columns (1) and (3)) and the change in propensity to vote over time (columns (2) and (4)). We measure the share of voters of each age group by interacting the turnout propensity with the population's demographics. We report for each age group (under 50 and over 50) differences between our last and first year of observation (respectively 2018 and 2002). Some countries exhibit strange spikes over time. This is mostly due to missing data. We remove these outliers (Finland, Portugal, Sweden, and Switzerland). We derive the turnout propensity from the European Social Survey letting it change across cohorts and over time, while demographics come from Eurostat.

Table A.3: Differences in policies discussed in Manifestos by country

Country	(1) Diff in share of pension words	(2) Diff in share of unemployment words	(3) Diff in share of stopwords
Belgium	75.3168	-72.1459	-1.5740
Finland	53.2353	-37.5708	-9.2863
France	-8.7093	37.1108	-1.8162
Germany	16.3835	-68.7438	-1.2389
Hungary	113.6249	-55.4948	-3.4409
Netherlands	28.5353	-25.8756	0.5219
Norway	12.2972	0.4247	-0.5426
Portugal	-26.9967	-42.2735	-1.2701
Sweden	79.8440	-73.2147	0.0219
Switzerland	31.1506	-46.5826	-1.7016
Spain	21.6353	-46.8992	-2.8798
United Kingdom	-28.1401	-88.4636	-3.0745

Notes: This table shows specific country trends in the changing frequencies of words related to "pension", "unemployment", and "stopwords" in political party manifestos across various electoral cycles. This analysis uses data from the Manifesto Project Database. We explain in detail the information available in this database in the Data section. We construct this figure by counting the occurrences of "unemployment", "pension", and stopwords in the manifestos, alongside the total word count. The dataset is then organized at the electoral cycle level, which typically spans 4-5 years, to create a more structured panel. We then calculate the shares by dividing the counts of "unemployment", "pension", and stopwords by the total word count in the manifestos of each country for each electoral cycle. The figure displays these shares for each period relative to the baseline period. We report for each share differences between the last and first year of observation.