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Economic insecurity and the demand for populism in Europe

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We document the spiral of populism in Europe and the direct and indirect role of economic insecurity shocks. Using survey data on individual voting, we make two contributions to the literature. (i) Economic insecurity shocks have a significant impact on the populist vote share, directly as demand for protection, and indirectly through the induced changes in trust and attitudes. (ii) A key consequence of increased economic insecurity is a drop in turnout. The impact of this largely neglected turnout effect is substantial: conditional on voting, when economic insecurity increases, almost 40% of the induced change in the vote for a populist party comes from the turnout channel.

1 | INTRODUCTION

What determined the populism wave in Europe in the 21st century? Are the common sources related to economic crises or stagnation, and if so, through what channels? This paper provides an empirical analysis of the channels through which economic insecurity affected the 'demand' for populism. The focus on the common features of populist parties (rather than a predominance of right-wing orientation) and the focus on a broad notion of economic insecurity (rather than just globalization shocks) are necessary for a deep understanding of the phenomenon.

The 21st century external threats of globalization and migration, as well as the financial crisis, undermined citizens' confidence in both leftist (government-based) policies and rightist (market-based) policies that respect the institutional constraints and functioning of politics. Global market competition, immigration and robotization are making some believers in free markets shake.[1] At the same time, the ability of governments to keep welfare state policies is reduced due to reduced fiscal space and supranational constraints (particularly in Europe). Facing this two-sided crisis, there is room for new movements (and existing ones) to promote a radical removal of constraining institutions.[2] In this context, a negative economic security shock that affects a citizen at a time when both left and right traditional recipes are perceived as ineffective may depress the motivation to vote for traditional parties on all sides of the political spectrum. This disappointment, in turn, generates an abstention-based space for populist platforms that thus experience a massive increase in support. Figure 1 lends support to this rationale. It shows

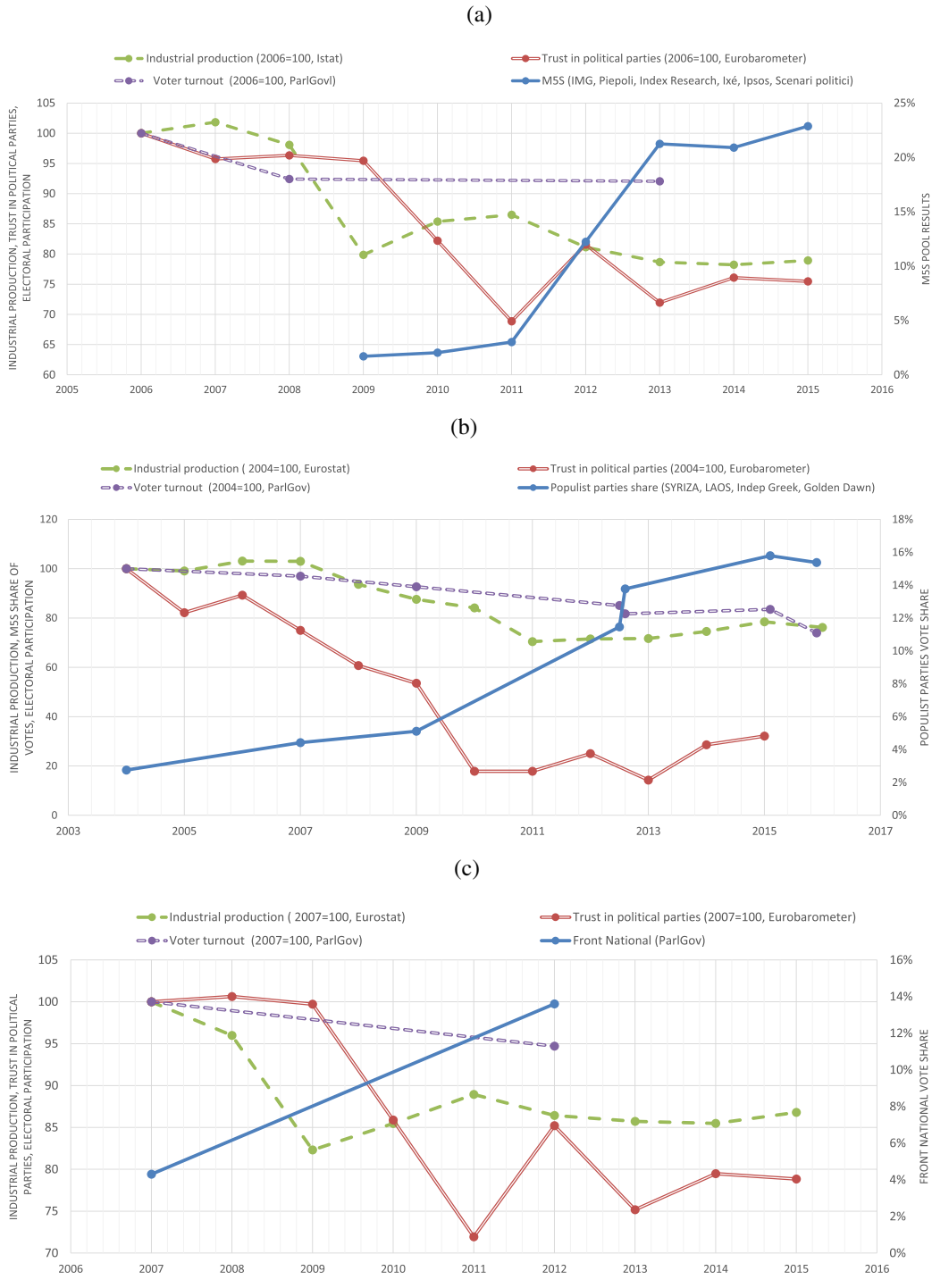

FIGURE 1 Populism, economics, electoral participation and trust. (a) Italy, (b) Greece, (c) France *Notes*: The plots show the evolution of economic activity, trust in political parties, electoral participation and consensus to populist parties in Italy, Greece and France. Economic activity (measured by the index of industrial production), the share of the vote going to the populist parties, and voter turnout are on the left-hand scale; trust in political parties is on the right-hand scale.

a pattern familiar to several European countries, namely an economic crisis followed by voter apathy and disaffection with traditional parties, followed in turn by more space for entry of new populist parties or a greatly magnified vote share of existing ones.

In this paper, we offer evidence consistent with the above timing of events: economic insecurity causes faith in traditional parties to wane, inducing voter disillusion; in turn, this economic insecurity-induced disillusion sparks support for populist platforms. We show that endogenous turnout effects (which have been neglected largely in the literature) are key in order to quantify the relevance of economic insecurity. This is due to the fact that economic insecurity shocks affect at the same time the willingness to participate in elections as well as the willingness to switch to a populist party conditional on voting.

Before turning to the description of our research design, data and empirical strategy, a few words are in order to define what we mean by economic insecurity and populist parties. For the former, many studies have used either unemployment data in isolation (e.g. Algan *et al.* 2017) or measures based on exposure to globalization and automation (e.g. Colantone and Stanig 2018a). For us, not only do we want to include both of these types of insecurity, but it is important also to include the specific additional insecurity caused by the financial crisis (see, for example, Guiso *et al.* 2022; Schafer *et al.* 2022). Thus our measure will be affected by the most relevant concerns coming from the different crises of the period.[3] For the latter, we will simply adopt the classification of parties as populist or not that is prevalent in political science, based mostly on their anti-elite rhetoric and pro-people rhetoric (Rooduijn *et al.* 2019, and the corresponding http://popu-list.org).[4] As shown in Bellodi *et al.* (2023), the rhetoric employed by populist parties derives its strategic justification from pandering to people's fears and increased distrust. Hence the demand for populist platforms is due to the fact that populist parties are proposing platforms that rely less on trusting political representatives.

We study the determinants of the *demand* for populist platforms in the countries covered by the European Social Survey. Our empirical analysis accounts for selection into electoral participation. We show that adverse shocks to economic security and trust in political parties induce people not to vote, and if they do, to choose a populist party. Ignoring the voter participation margin would bias the estimates substantially, understating the underlying demand for populist parties; but also would obscure the mechanism by which the disappointment induced by the crisis favours populists. A simultaneous heckprobit estimation of participation and populist vote shows that economic insecurity has statistically and economically significant direct effects on both margins: it lowers the chances of turning out, but when a vote is cast, it raises the chances of voting populist.

The data that we use, namely the representative repeated cross-sections of the European Social Survey from 2002 to 2018, allow us to build a pseudo-panel to show that trust in politics and immigrant attitudes variables are also affected by changes in economic security. We conduct a mediation analysis that allows us to establish that the direct effect of economic insecurity shocks on turnout and populist voting is a lower bound for the role of such shocks, since such shocks also affect trust and attitudes, which in turn have reinforcing effects on turnout and vote choice in the same direction. Thus we can document a large total effect (direct and indirect) of economic insecurity on the demand for populism. The most important novel contribution of our empirical analysis concerns the so far neglected turnout mechanism: *more than one-third* of the increase in the propensity to vote for a populist party relative to other parties after economic security shocks comes from a turnout effect. Ignoring the turnout channel, one could reach the conclusion (see, for example, Norris and Inglehart 2019) that economic variables do not matter much in the decision to vote for a populist party. Indeed, failure to consider that economic security shocks significantly affect the decision to abstain makes inconsistent any estimate of the impact of economic insecurity.[5]

In terms of empirical methodology, the problem to be solved is that the votes for populist parties depend both on the vote choice among those who vote and, simultaneously, on the

decision to participate. Therefore to identify the role of turnout, we need an exogenous variation in the likelihood to vote that is orthogonal to the party preference. We use mean temperature and total rainfall on the day of the elections in each region–year. The identification assumption is that meteorological conditions on election day affect the cost of going to the polls (differentially for countries where it rains infrequently or where temperatures are frequently low) but not the preference for voting for a specific party. While this empirical strategy allows us to isolate properly the turnout effects, we cannot rule out that in the relationship between economic insecurity and voting for a populist party, other confounders might still play a role. However, to alleviate this concern, we perform a sensitivity analysis that shows how big the omitted variables would need to be to bring the role of economic insecurity in populist votes to insignificance.

For a review of the literature on populism in the social sciences in general, see, for example, Gidron and Bonikowski (2013) and Mudde and Kaltwasser (2017), and the most comprehensive one by Guriev and Papaioannou (2022). Rodrik (2018) traces the origin of today's populism to the globalization shock, arguing that history and economic theory imply that waves of globalization will lead predictably to a populist backlash, and with specific timing (when the shock hits) and geographical pattern (in the countries most severely affected). While the shock of globalization generates demand for populist policies when considered in isolation and for specific events,[6] Guiso *et al.* (2019) show that globalization shocks alone cannot account for the cross-country evidence of populist outbreak in Europe. They show that the interaction of globalization with a euro dummy captures all the explanatory power, and in the presence of such an interaction variable, globalization shocks alone lose relevance. In contrast, using the broader notion of economic insecurity that we propose, the interaction effects with institutional variables do not eliminate the significance of economic insecurity.

Algan *et al.* (2017) study the political consequences of the Great Recession in Europe, showing that in elections after 2008, the regions where unemployment rose saw the sharpest decline of trust in institutions and establishment politics. Dustmann *et al.* (2017) reach similar results, showing that in the aftermath of the crisis, mistrust of European institutions, largely explained by the poorer economic conditions of the euro area countries, is correlated with the populist vote. Foster and Frieden (2017) nuance this result using individual characteristics from the Eurobarometer survey, and also show that the correlation is stronger in debtor countries. We contribute to this literature by finding that economic insecurity affects the consensus for populist parties not directly but primarily because it disappoints the supporters of the traditional parties of both left and right. This induces abstention and creates a potential electoral basis for a populist platform.[7]

The paper is organized as follows. In Section II, we describe the data. We illustrate the conceptual framework and the econometric specification in Section III. Our main results follow in Sections IV and V, which quantify the direct and indirect effects of economic insecurity through turnout and voter sentiments. Section VI concludes.

2 | THE DATA

Our main source of individual data is the European Social Survey (ESS). The ESS systematically tracks changing situations, values and attitudes. It covers all European countries, though not every country participates in every wave. Data have been collected every two years since September 2002 by face-to-face interviews. We use eight waves. The questionnaire consists of a core module, constant from round to round, and smaller rotating modules, repeated at intervals, on selected substantive topics. We will use the core module, which covers a wide range of social, economic, political, psychological and demographic variables. Appendix Table A1 shows summary statistics for all the variables described below.

2.1 | Turnout and voting

The ESS asks people whether they voted in the last parliamentary election in their country, and which party they voted for. From these data, we obtained our turnout variable and constructed a dummy that takes value 1 if the voter voted for a populist party.[8]

A second set of data is introduced in order to have variables that affect the cost of participating in an election but not the voter's choice of party. To this end, we have collected data on the weather on the day of the national elections considered, at the NUTS3-region level. In particular, we have obtained data on the average temperature and precipitation on election day in each region using the E-OBS dataset provided by the European Climate Assessment & Dataset project.

2.2 | Economic insecurity

The key explanatory variable that we construct from the ESS data is economic insecurity. We capture heterogeneity in economic insecurity with three measures: first, whether the voter has been unemployed for some time in the past five years, forcing a search for a new job; second, as a measure of financial distress, whether the voter is experiencing income difficulties (i.e. finds it hard to live on her current income);[9] and third, an indicator of exposure to globalization, constructed exploiting information in the ESS on type of employment, industry and skill level—classifying as more exposed low-skill workers in manufacturing. The indicator takes value 1 if the individual is a blue-collar worker in manufacturing, and 0 otherwise. We will find it useful to combine these three objective measures of financial and economic distress in a single composite index of economic insecurity by taking the first principal component, rescaled to vary between 0 (least insecure) and 1 (most insecure). With this measure, we are agnostic about the specific factor causing economic insecurity.

Economic insecurity may also be produced by labour market competition due to immigration. Unfortunately, there are no data on immigration inflows by country of origin and region of destination, which would enable us to obtain intra-country variation in individual exposure to labour market pressure. To capture the fear of displacement in the labour market due to the possible arrival of cheap labour, we use a measure of sentiments towards immigrants: whether the voter would like fewer immigrants from low-wage countries, with answers ranging from 1 to 4, increasing in the degree of support for immigration quotas. The ESS also collects people's attitudes towards quotas on immigrants from countries of the same race/ethnicity and from countries of different races and ethnicity, as well as whether people agree with the statement that immigrants make their country worse. Our results do not change when using different measures.

2.3 | Trust in traditional politics and institutions

The ESS has several proxies for confidence in institutions, governments and political parties, all on a scale between 0 (no trust) and 10 (full trust). These indicators tend to be closely correlated and thus hard to tell apart. In analysing individual voting behaviour, we use trust in political parties, which speaks directly to our model. In studying the link between economic insecurity and trust, we use all the measures.

2.4 | Other controls

We enrich the set of explanatory variables with two proxies for voters' ability to foresee the pitfalls of the populist platforms. The first is education, measured by the number of years of

full-time schooling completed. The second is a measure of attention to politics, captured by two variables: how many hours per week people devote to watching TV in general, and how many of these hours are spent watching news or programmes about politics and current affairs.[10] Watching TV in general is taken as a proxy for little interest in politics, and thus as a proxy for poor information. Watching news and programmes about politics, given the time spent watching TV, is used to proxy for information level. Voting for an anti-establishment party may entail some risk and be more appealing for risk-prone voters. Similarly, sensitivity to policies that offer short-term protection at the expense of long-term policies may depend on people's subjective discount. We use age as a proxy for subjective discounting, on the presumption that older people are less likely to have to bear the future cost of current policies. As a proxy for risk tolerance, we use the ESS indicator of whether people consider it important to avoid taking risks. In all regressions, we control for gender and political orientation, measured on a scale from 0 (far left) to 10 (far right). Needless to say, some of the variables can proxy for more than one of the dimensions of heterogeneity that we have listed. For instance, gender may also reflect risk preferences, as may age.

2.5 | Populist parties

To identify populist parties in Europe, we rely on the PopuList proposed by Rooduijn *et al.* (2019), available at http://www.popu-list.org. The PopuList is a list of populist European parties that obtained not less than 2% of the vote in at least one national parliamentary election since 1998. Peer-reviewed by more than 30 academics, the list is kept up to date and records changes in the classification of individual parties over time. All of these features make the classification reliable and useful for our analysis. Rooduijn *et al.* (2019) base their classification of populist parties on the classic definition provided by Mudde (2004).[11] Using criteria compatible with the Mudde (2004) definition, the authors identify 82 populist parties in 28 of the 31 countries examined. The full list of parties is available in Appendix Table A2.

3 | METHODOLOGY

In order to model empirically the demand for populism accounting for endogenous voter participation, we model voting as a two-step decision: (a) whether to participate in an election (the participation decision); and (b) conditional on participation, which party to vote for—in particular, whether or not to vote for a populist party (the voting decision). Estimating the turnout and vote choice decisions simultaneously is important for two related but distinct reasons: first, to get consistent estimates of the voting decision if unobserved components of the participation decision are correlated with unobserved components of the voting decision; second, to pin down the channels through which voters' characteristics impact vote choice.

Denoting by z a variable that affects only the participation decision, and by x a variable that affects both the participation and the party choice, note that our dependent variable of interest, namely the probability of voting for a populist party conditional on voting, denoted by $\pi^C(x)$, must be equal to the ratio of the joint distribution and the marginal probability of turning out, namely $\pi^J(x,z)/\pi^V(x,z)$. Here, $\pi^J(x,z)$ is the joint probability of voting and preferring a populist party, which is basically what one estimates when ignoring the turnout incentives. The effect of a change in x, say an increase in economic insecurity, on the conditional probability of voting is

$$\pi_x^C = \left(\pi_x^J \pi^V - \pi_x^V \pi^J\right) / \left(\pi^V\right)^2,$$

or, in percentage terms,

$$\pi_x^C/\pi^C = \pi_x^J/\pi^J - \pi_x^V/\pi^V. \quad (1)$$

Equation (1) clarifies that the effects of a change in economic insecurity on the conditional probability of voting for a populist (in percentage of the sample mean), which is our variable of interest on the left-hand side, is a sum of two effects, where the first one on the right-hand side is the standard effect on the joint distribution, whereas the second one comes entirely from the neglected turnout incentives.[12]

Estimating voting and participation decisions jointly, we retrieve consistent estimates of π_x^C and π_x^V, and can assess the role of turnout in the voting results.

3.1 | Instrumented heckprobit

To deal with the issues related to the fact that people decide whether to vote or not, and then whom to vote for conditional on voting, we estimate a two-step Heckman probit model, estimating first the probability of participation, and then the probability of voting for the populist party adjusting for selection.

Electoral participation depends on the same set of variables as the choice of the party, possibly with opposite signs. For identification, we need a personal characteristic—an instrument—that affects the net benefit of voting (benefit less cost), but not the choice of the party conditional on participation. As instruments, we use here the mean temperature and total rainfall on the days of the elections in each region–year. The identification assumption is that meteorological conditions on the election day affect the cost of going to the polls but not the preference for voting for a specific party, which should reflect less transient factors. Because the effect of rain or heat on the cost of going to the polls may be stronger in countries where it rains infrequently (or where temperatures are frequently low), we also include interactions between rainfall and temperature with a dummy variable for southern countries.

3.2 | Econometric specification

Formally, we estimate the selection equation

$$\begin{aligned} voted_{irct} = {} & \gamma_1\ \mathbf{x}_{irct} + \gamma_2\ rain_{rct} + \gamma_3\ rain_{rct} \times south_c + \gamma_4\ av.\ temperature_{rct} \\ & + \gamma_5\ av.\ temperature_{rct} \times south_c + \gamma_6\ EI_{ict} + f_c + f_t + \varepsilon_{ict} \end{aligned}$$

and the second-stage equation

$$voted\ populist_{irct} = \alpha_1\ \mathbf{x}_{irct} + \alpha_2\ EI_{irct} + f_c + f_t + v_{irct},$$

where $voted_{irct}$ is a dummy variable assuming value 1 if the person i (living in region r, belonging to country c) voted in period t. Also, $\mathbf{x}_{jct}$ is the vector of controls, $rain_{rct}$ is the daily total rainfall in the day of the election in region r, $south_c$ is a dummy indicating southern countries (Spain, Portugal, Italy, Greece, Cyprus, Malta), $av.\ temperature_{rct}$ is the daily mean temperature in region r on the day of the election, EI_{jct} is the index of economic insecurity,[13] $voted\ populist_{ict}$ is a dummy assuming value 1 if individual i voted for a populist party, f_c and f_t are country- and time-specific fixed effects, and u_{irct} and v_{irct} are error terms.

We start estimating our model on the sample of countries that have a populist party in the ESS waves. Later, we extend the estimates to all countries and account for selection induced

by populist party existence/entry. As we will see, the results are unaffected, suggesting that the included controls already capture the variables that affect populist parties' presence. In all specifications, we control for gender and political orientation, and the population of the voter's region; we also include country-level fixed effects and ESS wave fixed effects. Importantly, country fixed effects capture all the time-invariant features of the country that may affect the success of populist platforms: the electoral system, the responsiveness of the established parties to salient political issues (such as labour market pressure from immigrants), and the level of corruption.[14] For brevity, these controls are not reported. We run regressions using sampling weights to account for differences in the nation sample sizes. In all regressions, standard errors are clustered at the regional level. Our final dataset consists of more than 142,000 items.

4 | RESULTS

Some recent papers on the drivers of populism make the prediction that a sharp decrease in economic security and trust leads to increased demand and supply of pandering commitments, and consequent populist platforms—see, for example, Bellodi *et al.* (2023) and references therein. The main contribution of our analysis is to confirm this prediction while establishing an important and neglected factor, namely that a large component of the economic insecurity effect on the conditional probability of voting populist comes via a turnout depression effect. The importance of taking into account turnout incentives in the estimation of voting choices has been established by Weschle (2014), and we will show that the endogenous turnout role is particularly strong in our context.

In this section, we first display some descriptive statistics on economic insecurity, with preliminary hints about populist voting and turnout depression predictions. Then for a correct and consistent estimation of the former, we show how important it is to consider the endogenous turnout depression effect.

4.1 | Descriptives on economic insecurity

To illustrate first the distribution of economic insecurity for our sample, we create a dummy variable 'economic insecure' that is equal to 1 if the respondent fits at least one of the three criteria for insecurity (he was unemployed in the last 5 years, or he is exposed to globalization, or his income difficulty variable—ranging from 0 to 3—is 3). The percentage of respondents classified as economically insecure is 25%. Figure 2 shows the percentage of economically insecure respondents among the respondents who voted populist or not. As we expect, among those who did not vote populist, only slightly more than 20% are economically insecure, while among the people who voted populist, the economically insecure are around 30%—a proportion that is 50% higher.

Figure 3 breaks down the continuous economic insecurity measure by terciles (in each country) and then reports the share of populist supporters (left-hand figure) and turnout (right-hand figure) in each tercile. The average vote share among the individuals belonging to the first tercile of the economic insecurity distribution is below 10%; it increases to around 13% and above 15% in the second and third terciles, respectively. Symmetrically, the turnout share among the individuals in the three terciles is, respectively, above 84%, approximately 76%, and slightly above 70%. These patterns suggest that both phenomena, namely the positive impact of economic insecurity on populist voting and the negative impact of economic insecurity on turnout, are present everywhere along the distribution of economic insecurity without visible discontinuities.

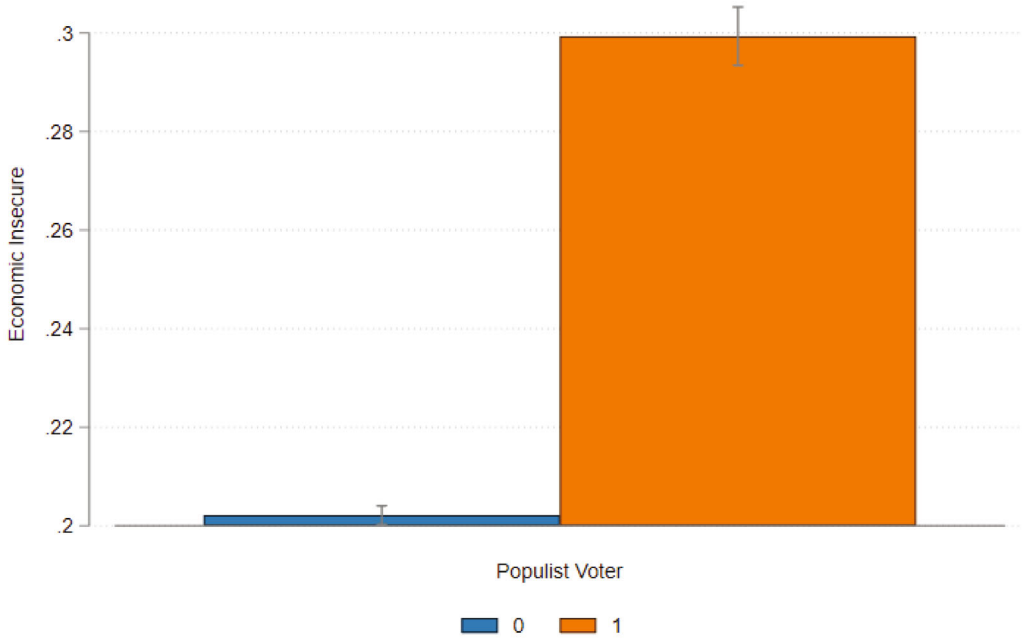

FIGURE 2 Economically insecure by populist vote. *Notes*: The figure shows the share of individuals classified as economically insecure by populist vote.

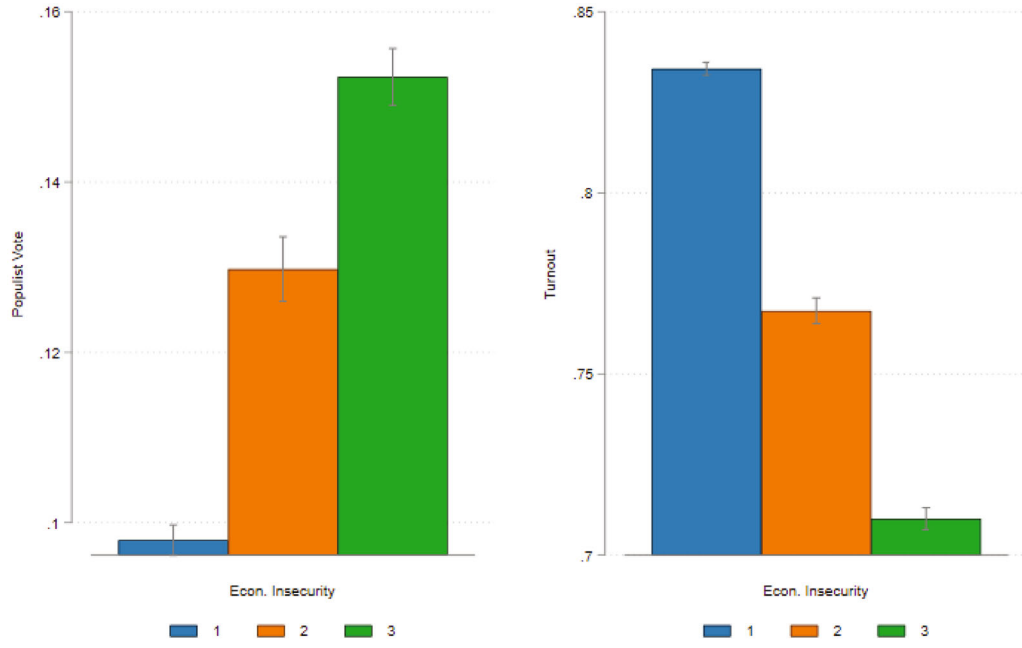

FIGURE 3 Populist vote and turnout by terciles of economic insecurity. *Notes*: The figure shows the populist vote (left-hand figure) and turnout share (right-hand figure) by terciles of economic insecurity. Consistent with our theory, the first tercile presents higher turnout and lower populist vote, and vice versa for the last tercile.

4.2 | Main analysis

Table 1 reports the estimates of several specifications, with a progressively augmented set of controls. The bottom part of the table shows the parameter estimates of the meteorological instruments on the participation decision. In general, rainfall on election day discourages participation. This effect is stronger for southern countries. Additionally, we can observe that participation increases when the temperature is higher, with similar effects in southern and northern countries. Increasing temperature on the day of the election by one standard deviation increases turnout by 4.9% of the sample mean, while a one-standard-deviation increase in the daily total rainfall on the day of the election lowers turnout by 1.5%. This conforms with intuition: higher temperature (relative to the country mean captured by the country fixed effects) is a good motivation to go to the polls in all countries, while going to vote in the rain is costly—even more so in southern countries, where people are less equipped for it.[15] Conditional on the controls and the instruments, there is some sign of selection bias, as shown by the significant correlation between the residuals in the voting and the participation regressions in all specifications.

Columns (1) and (2) of Table 1 show the results of participation and voting decisions controlling for risk and time preferences, education, political information, and the three proxies for economic insecurity. The proxy for risk aversion has a significant positive effect on participation: people who consider it important to avoid taking risks are more likely to vote. This measure has no effect on the choice to vote for a populist party. Hence we find no support in the data for the idea that since the populist choice entails risk, it is more appealing to risk-tolerant voters. Interestingly, women are less likely to participate, and when they do, they are also less likely to support populist platforms, while the politically right-leaning are more likely to participate.[16] Education has a positive and precisely measured effect on voting, and, conditional on participation, a negative effect on support for a populist party. The proxy for political information has a significant impact on turnout—more politically informed citizens are more likely to participate—while its relevance decreases in the specification with full controls.

Our study confirms the importance of the economic insecurity mechanism.[17] Crucially, economic insecurity changes act on two margins: discouraging participation and increasing the likelihood of a populist vote among those who do decide to vote. The effect on the participation margin is estimated precisely and is highly responsive to unemployment, income loss, and exposure to globalization. The populist vote is more likely among those who lost a job, suffer an income loss and are exposed to globalization, despite the latter being not estimated significantly under standard thresholds.

To facilitate the interpretation of the magnitude of the effects of economic insecurity, the second set of regressions replaces the three measures of economic insecurity with their principal component. The index of economic insecurity significantly affects electoral participation and voting for the populist party. At sample means, increasing economic insecurity by one standard deviation lowers turnout by 6.3% of the sample mean, and increases the populist vote by 17%. For an individual who transits from no economic insecurity to economic insecurity, the probability of voting for a populist party increases by 12.7 percentage points (82% of the unconditional sample mean), while the probability of voting falls by as much as 24 percentage points, equivalent to 30% of the sample mean. These are substantial effects.[18]

Columns (5) and (6) of Table 1 have trust in political parties as an additional explanatory variable. Consistent with our proposed interpretation of the role of disappointment with politics in the rise of populism, people with greater confidence in political parties are more likely to vote and to vote for a non-populist party. Those who have lost faith in political parties are more likely to abstain, but if they do vote, they are more likely to choose a populist party. Trust in political parties is on a scale of 0 to 10; a drop of 5 points increases the probability of voting for a populist party by 10% of the sample mean. The effect on electoral participation is similarly strong: a drop

TABLE 1 Heckman probit estimates of populist party vote and participation in voting.

	Heckprobit		Heckprobit		Heckprobit		Heckprobit	
	Populist	Vote	Populist	Vote	Populist	Vote	Populist	Vote
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Risk aversion	−0.00256	0.0142***	−0.00161	0.0137***	−0.00264	0.0155***	−0.00358	0.0169***
	(0.00800)	(0.00390)	(0.00803)	(0.00389)	(0.00845)	(0.00413)	(0.00861)	(0.00419)
ln(Age)	−0.306***	0.762***	−0.292***	0.751***	−0.301***	0.768***	−0.324***	0.780***
	(0.0713)	(0.0268)	(0.0695)	(0.0267)	(0.0700)	(0.0274)	(0.0722)	(0.0279)
ln(Education)	−0.436***	0.527***	−0.451***	0.539***	−0.437***	0.526***	−0.387***	0.521***
	(0.0536)	(0.0360)	(0.0531)	(0.0358)	(0.0521)	(0.0371)	(0.0544)	(0.0377)
TV total	0.0171**	−0.0208***	0.0177**	−0.0210***	0.0186***	−0.0191***	0.0138*	−0.0192***
	(0.00722)	(0.00454)	(0.00716)	(0.00451)	(0.00711)	(0.00442)	(0.00714)	(0.00434)
TV politics	−0.0265***	0.0557***	−0.0264***	0.0558***	−0.0205**	0.0489***	−0.0169**	0.0484***
	(0.00838)	(0.00625)	(0.00835)	(0.00627)	(0.00841)	(0.00642)	(0.00846)	(0.00633)
Unemployment	0.147***	−0.167***						
	(0.0319)	(0.0184)						
Income difficulties	0.209***	−0.154***						
	(0.0144)	(0.0107)						
Exposure globalization	0.0529	−0.113***						
	(0.0345)	(0.0229)						
Economic insecurity (PC)			0.813***	−0.718***	0.726***	−0.656***	0.707***	−0.650***
			(0.0634)	(0.0412)	(0.0620)	(0.0425)	(0.0645)	(0.0430)
Trust in political parties					−0.0783***	0.0473***	−0.0719***	0.0461***
					(0.00611)	(0.00371)	(0.00607)	(0.00376)
Few immigrants from non-EU							0.144***	−0.0287***
							(0.0177)	(0.00803)
Controls, wave FE, country FE	Yes		Yes		Yes		Yes	
Rho	−0.391		−0.400		−0.375		−0.373	

TABLE 1 (Continued)

	Heckprobit		Heckprobit		Heckprobit		Heckprobit	
	Populist	Vote	Populist	Vote	Populist	Vote	Populist	Vote
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cluster standard error	Region		Region		Region		Region	
Countries	With P		With P		With P		With P	
Observations	155,506		155,506		145,877		142,849	
Censored observations	49,509		49,509		46,421		45,099	
Selection								
Rain		−0.00708**		−0.00712**		−0.00728**		−0.00750**
		(0.00292)		(0.00288)		(0.00316)		(0.00324)
Rain × South		−0.0166**		−0.0164**		−0.0150*		−0.0145*
		(0.00807)		(0.00805)		(0.00792)		(0.00771)
Average temperature		0.0178***		0.0179***		0.0206***		0.0208***
		(0.00612)		(0.00612)		(0.00635)		(0.00639)
Average temperature × South		−0.00896		−0.00925		−0.00831		−0.00511
		(0.0118)		(0.0118)		(0.0117)		(0.0116)

Notes: The table shows Heckman probit estimates of the decisions to vote (Vote) and to vote for a populist party conditional on participation (Populist). Left-hand-side variables: a dummy if a voter has chosen a populist party in the column Populist, and a dummy if he has participated in the election in the column Vote. The excluded instrument in the populist regression is an indicator of weather conditions on election day. All regressions include country and wave fixed effects. 'PC' means principal component. 'With P' means with a populist party. Robust standard errors clustered at the region level are shown in parentheses. ***, **, * indicate significant at 1% or less, 5%, 10% confidence levels, respectively.

TABLE 2 Direct effects and effects via turnout.

	Effect of conditional probability of 1 S.D. over sample mean (1)	Contribution via turnout (2)
Economic insecurity (PC)	0.150	0.057
Trust in political parties	−0.186	−0.046
Few immigrants from non-EU	0.158	0.011

Notes: The table shows the direct effect on voting for a populist party of a one-standard-deviation increase in economic insecurity, trust in political parties, and attitudes towards immigrants, respectively (column (1)), and the contribution through the change induced in turnout. Calculations use estimates in columns (7) and (8) of Table 1. 'PC' means principal component.

of 5 points lowers the chance of participating in elections by 6.7 percentage points, almost 44% of the unconditional mean electoral turnout.

Columns (7) and (8) of Table 1 add, as a control, a measure of attitudes towards immigrants, used as a proxy for fears of competition in the labour market. Support for policies that limit immigrants from non-EU countries, support for limiting immigrants of the same race/ethnicity or immigrants of other race/ethnicity than that of the respondent, or an average of the three measures, all have the same implications: people who are more averse to immigrants are less likely to vote, and more likely to vote for a populist party if they do. A one-standard-deviation increase in hostility to immigrants lowers turnout by 1% of the sample mean; the effect on voting for a populist party is more pronounced: it increases by 15.8% of the sample mean. The effects of the other variables, particularly economic insecurity and trust in political parties, are unchanged.

4.3 | The magnitude of the turnout effect

In column (1) of Table 2, we compute the left-hand side of equation (1), namely the percentage change in the conditional probability of voting populist, changing each of the independent variables by one standard deviation. In column (2), we compute the second term of the right-hand side of equation (1), namely the percentage change in the propensity to vote when changing the same three variables by one standard deviation. We are interested in establishing how large is the neglected turnout effect (column (2)) as a component of the overall effect (column (1)).

When considering economic insecurity, our main variable, the neglected turnout effect is 38%, a very large fraction.[19] Similarly, if one focuses on another key variable, such as trust, then the effect of the decrease in turnout incentives amounts to roughly 25% of the overall effect, while for anti-immigrant sentiment, this contribution is lower, around 7%. In sum, accounting for the effects on the decision of whether or not to vote is crucial to understanding how the drivers of populist voting operate.

4.4 | Robustness

Table 3 presents several robustness exercises on the results in Table 1. Columns (1) and (2) run the estimates of the Heckman probit using all the sample countries, not only those that have a populist party. That is, the turnout equation is estimated using observations for countries both with and without populist parties. The endogenous presence of populist parties is captured fully by the country dummies. The results are unaffected. Economic insecurity lowers participation

TABLE 3 Robustness.

	Heckprobit		Heckprobit		Heckprobit	
	Populist	Vote	Populist	Vote	Populist	Vote
	(1)	(2)	(3)	(4)	(5)	(6)
Risk aversion	−0.00272	0.0177***	0.00156	0.0170***	−0.000808	0.0160***
	(0.00850)	(0.00407)	(0.00870)	(0.00447)	(0.00862)	(0.00412)
ln(Age)	−0.197***	0.763***	−0.205***	0.797***	−0.282***	0.767***
	(0.0603)	(0.0279)	(0.0568)	(0.0270)	(0.0708)	(0.0272)
ln(Education)	−0.367***	0.427***	−0.372***	0.542***	−0.415***	0.525***
	(0.0527)	(0.0399)	(0.0522)	(0.0365)	(0.0535)	(0.0374)
TV total	0.0169**	−0.0209***	0.0182**	−0.0252***	0.0183**	−0.0187***
	(0.00717)	(0.00383)	(0.00722)	(0.00441)	(0.00729)	(0.00446)
TV politics	−0.0150*	0.0506***	−0.0185**	0.0528***	−0.0176**	0.0491***
	(0.00866)	(0.00537)	(0.00895)	(0.00627)	(0.00845)	(0.00646)
Economic insecurity (PC)	0.674***	−0.635***	0.689***	−0.705***	0.705***	−0.656***
	(0.0592)	(0.0365)	(0.0601)	(0.0480)	(0.0655)	(0.0426)
Trust in political parties	−0.0730***	0.0456***	−0.0825***	0.0522***	−0.0789***	0.0476***
	(0.00613)	(0.00340)	(0.00615)	(0.00376)	(0.00623)	(0.00376)
Controls	Yes		Yes		Yes	
Wave FE	Yes		No		Yes	
Country FE	Yes		No		Yes	
Wave × Country FE	No		Yes		No	
Rho	−0.150		−0.185		−0.331	
Cluster standard error	Region		Region		Region	
Countries	All		With P		With P (no new P)	
Observations	177,567		145,877		143,581	
Censored observations	56,618		46,421		46,421	

Notes: The table shows robustness Heckman probit estimates of the decisions to vote and to vote for a populist party. Left-hand-side variables: a dummy if a voter has chosen a populist party in the column Populist, and a dummy if he has participated in the election in the column Vote. The excluded instrument in the populist regression is an indicator of weather conditions on election day. The first set of regressions includes all countries, not only those with a populist party; the second set controls for interacted country–wave fixed effects; the last set runs the regressions dropping observations of individuals who voted for a new party. The first and last sets of regressions include country and wave fixed effects. Robust standard errors clustered at the region level are shown in parentheses. 'PC' means principal component. 'With P' means with a populist party, and 'no new P' means no new party.
***, **, * indicate significant at 1% or less, 5%, 10% confidence levels, respectively.

and increases the populist vote; the effects are significant and of the same order of magnitude as those in Table 1. The same holds for the effects of trust in parties and the other controls. Columns (3) and (4) add country-wave fixed effects, capturing changes in populist manifestos and rhetoric. Again, the results are unchanged. One concern is that the populist vote may be capturing voting for a new party as such. To address this, in columns (5) and (6), we run the estimates after dropping individuals who voted for any new party, that is, a party present in the election for the first time. The results are basically unaffected. Appendix Table A4 reports the first stages of Table 3.

Additional robustness of our results can be provided by showing that the main findings could be replicated qualitatively by looking at linear probability models. In Subsection A of the Appendix, we regress our main variable of interest, together with the same set of controls and fixed effects of the main specifications, on three different binary outcomes: voted, voted for populist, and votes for non-populist parties, showing that results are in line with our main findings.

Another instructive robustness check is seeing whether the role of turnout incentives shows up also when estimating a reduced form of populist voting where we consider the interaction between economic insecurity and weather-related incentives to vote on the right-hand side. Indeed, if we run a regression mimicking the second stage of our heckprobit, but interacting the economic insecurity variable with a dummy summarizing weather conditions (details below), we see that broadly consistent with our exclusion restriction, the weather condition that we will now describe does not matter for voting populist, but it magnifies the populist vote. In particular, the dummy in this specification takes value 1 when on the election day rainfall level was below the country-specific median and the temperature was higher than the country-specific median, therefore this can be considered a 'good voting condition' dummy. What this reduced form shows, in a nutshell, is that (both in a probit and in a linear probability model setting) economic insecurity matters more for populist voting under good voting conditions. Results and further details on the specification are reported in Subsection A of the Appendix.

In Subsection A of the Appendix, we test the robustness of our main results (i.e. Table 1) when adding a specific control to alleviate the concern that the weather on the day of the election may be indicative of the weather for a longer time period in a specific country.[20]

5 | TRUST IN POLITICS AND ATTITUDES TOWARDS IMMIGRANTS

In our main results, we have treated trust and attitudes towards immigrants as controls. However, in this section, we want to argue that these two variables may themselves be affected by changes in economic insecurity. If this is the case, then the above results on the impact of economic insecurity on populist voting and turnout would be a lower bound of the total effect, which is in fact mediated partly by trust and attitudes.[21]

As a first hint of the existence of such a mediation effect in our context, we present a quick mediation analysis using ordinary least squares (OLS), and we then turn to a more sophisticated analysis through the construction of a pseudo-panel.

5.1 | Mediation analysis preliminary hints

We perform a mediation analysis using the populist vote as the dependent variable, economic insecurity as the independent variable, and either trust or attitudes towards immigrants as mediators in a 'standard' OLS setting. This simple setting allows us to conduct a preliminary study of the role of the two channels in mediating the impact of economic insecurity on populist vote share using three different methods, namely Delta, Sobel and Monte Carlo.[22] The results of the analysis confirm our prior: (i) about 11% of the effect of economic insecurity on populist votes is mediated by trust in political parties; and (ii) about 7% of the effect of economic insecurity on the populist vote is mediated by attitudes towards immigrants. These results are statistically significant using the three different methodologies and therefore indicate *partial* mediation. In other words, our results suggest that there are significant 'cultural

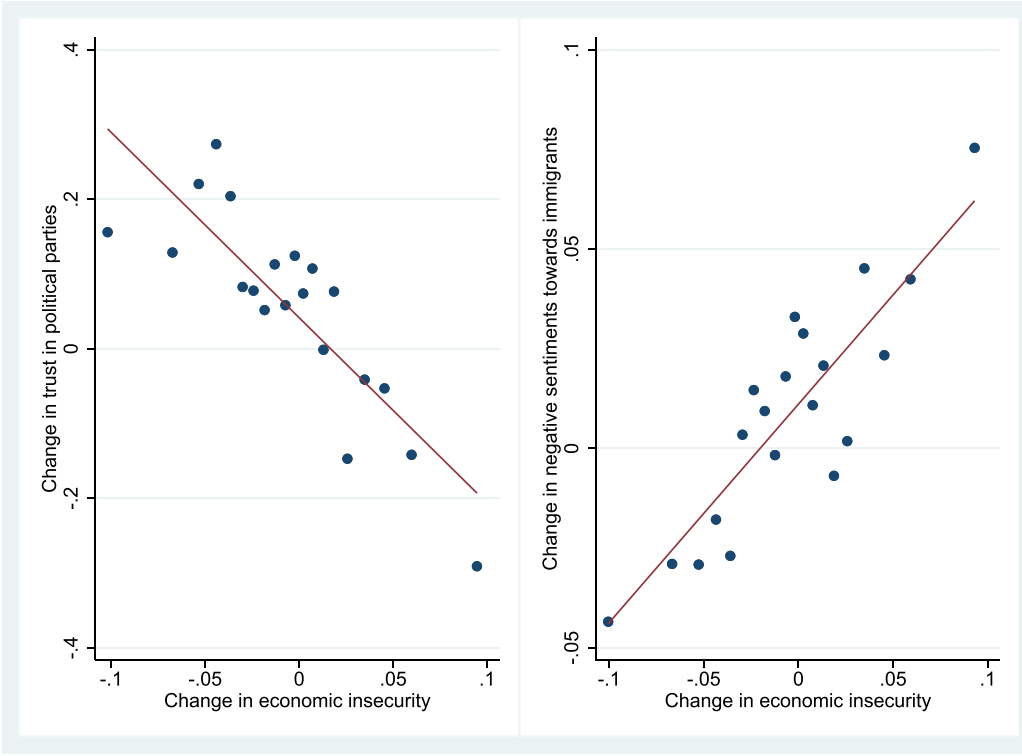

FIGURE 4 Economic insecurity, trust and sentiments. *Notes*: The figure shows the binned scatterplot (20 equal-sized bins) and linear regressions of the change in economic insecurity (*x*-axis) and the change in trust in political parties (*y*-axis, left-hand plot, 4166 observations) and attitudes against immigrants (*y*-axis, right-hand plot, 4726 observations) in the synthetic cohorts panel.

channels' that mediate the effect of economic insecurity on populist vote share, though small in magnitude.

5.2 | Synthetic panel model

Economic insecurity and trust in political parties are negatively correlated when gauged using cross-sectional variation in the pooled ESS. Similarly, economic insecurity is correlated positively with hostility to immigrants from non-EU countries. These correlations hold even controlling for observable and country and wave fixed effects.[23] Of course, the correlations may just reflect unobserved heterogeneity—that is, some individual characteristics that drive both economic insecurity and people's trust in politics and attitudes towards immigrants. To address this problem partially, we follow Deaton (1985) and construct a pseudo-panel from the sequence of ESS waves. Panel B of Appendix Table A1 shows summary statistics for all the variables used in this subsection. We group the data into fourteen 5-year age cohorts of men and women in each country, respectively. The left-hand plot of Figure 4 shows a simple bivariate correlation between the change in trust in political parties and that in economic insecurity among the pseudo-panel cohorts. In all cases, an increase in the economic insecurity of the cohorts leads to a decrease in trust in political parties. The right-hand plot shows the bivariate correlation between changes in attitudes towards EU immigrants and changes in economic insecurity for the same cohorts. This second correlation is strongly positive.

We can now introduce an econometric specification aimed at strengthening the identification of the economic insecurity effect using cohort fixed effects. Specifically, we estimate the model

$$y_{jct} = \beta_1 \mathbf{x}_{jct} + \beta_2 EI_{jct} + f_j + f_{ct} + u_{jct},$$

where y_{jct} denotes the generic belief/attitude of cohort j in country c in year t, $\mathbf{x}_{jct}$ is the vector of controls, EI_{jct} is the index of economic insecurity, and u_{jct} is an error term. Unobserved heterogeneity is controlled for by the cohort-specific fixed effects f_j.[24] Country-specific trends in beliefs/attitudes and economic insecurity are captured by country–year fixed effects f_{ct}. The latter picks up any country aggregate variable that affects changes in beliefs over time, including any effect of populist party rhetoric.

Appendix Table A7 shows that the coefficient of economic insecurity on trust and attitudes is significant even in this model with cohort fixed effects. The effects are substantial: a one-standard-deviation increase in economic insecurity lowers trust in political parties by 7.1% of its sample standard deviation, and increases hostility to non-EU immigration by 5% of its sample standard deviation.[25]

The pseudo-panel regressions with fixed effects should give more confidence in the possibility that economic insecurity indeed affects trust and attitudes, but without reaching the standard of full identification. Note, however, that reverse causality—people who lose trust in parties and because of this are more likely to lose their jobs or suffer income losses—does not seem to be plausible, particularly in light of the fact that any effect that a generalized loss of confidence in politics has on the economy is already picked up by the time fixed effects, and similarly for a change in attitudes towards immigrants.

6 | CONCLUSIONS

Western countries in the 21st century have experienced an unprecedented sequence of crises that have affected global markets and sovereign states, leaving many people on unstable ground in a way unseen before. The rare combination of the inability of both markets and governments to provide security has shaken the confidence in traditional political parties and institutions, inducing frustration and fears aggravated by growing threats from mass immigration and globalization. This paper has described how this dual crisis, reflected in people's economic insecurity, has systematically affected the demand for populist policies. Most important, in line with the insights of Weschle (2014) on the importance of accounting for endogenous turnout when estimating the voting choices, we have shown that alienation-induced abstention, largely ignored by previous literature, explains almost 40% of the total effect of economic insecurity on the conditional probability of voting populists. We have also shown that there are additional indirect effects of economic insecurity that are non-negligible, but the main contribution of the paper is certainly the identification and quantitative evaluation of the turnout depression component of populist voting. The future will tell us whether the populists who won elections make policies that will make economic insecurity ultimately even higher, and what is this going to entail. In particular, Funke *et al.* (2023) show that once in office, the populist has caused in history significant negative consequences for economic outcomes, and research should focus on whether this is going to create a vicious cycle or determine a backlash.

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ENDNOTES

[1] OECD data indeed show that not only did trust in governments and institutions collapse in the 21st century in Europe (see https://www.oecd.org/governance/trust-in-government, accessed 1 January 2024), but also trust in markets collapsed going back to the levels of the 1978 oil-driven crisis (see https://data.oecd.org/leadind/consumer-confidence-index-cci.htm, accessed 22 January 2024).

[2] Various forms of exit, rejection of international treaties previously subscribed to, construction of walls, and so on, are just examples of simple protection commitments that have traction today but would not have attracted votes in other decades.

[3] Our main source of data for the measures of economic insecurity, changing over time, is the European Social Survey, which is available starting in 2002. Changes in economic insecurity responses to survey questions can reflect a number of threats, some of which may be cultural. By no means do we intend to exclude the possibility that the main triggers behind such reported changes may be cultural threats. Moreover, economic insecurity perceptions may affect the populist vote in several indirect ways, for instance fostering a fear of white-status loss in the case of Trump voters, as documented in Mutz (2018).

[4] Underlying the popu-list.org classification of parties that we use is the definition of populism proposed by Mudde (2004): widely accepted in the recent political science literature, it characterizes populism as 'a political narrative that antagonizes the people and the corrupt elite, and that aims for policies that reflect the will of and are understood by the people'.

[5] The increase in abstention is due to an increased distrust in political parties, namely to the fact that voters feel less represented by traditional parties, so they lose interest in politics. A confirmation of the fact that economic shocks affect in large part turnout switching rather than vote choice switching can be found in Weschle (2014), where the analogue of our distrust language is alienation. Turnout switching includes both the tendency of incumbent supporters to abstain next (alienation effect) and the tendency of some people who abstained prior to the economic shock to now vote for the opposition. We do not need to engage separately the two sides of the turnout switching channel, since all we care about here is establishing that the turnout switching channel as a whole cannot be ignored if one wants to avoid clear inconsistency.

[6] Autor *et al.* (2020), Colantone and Stanig (2018a,b) and Jensen and Bang (2017) are clear examples of well-identified effects of the China shock on specific manifestations like Brexit. Pástor and Veronesi (2021) show that the backlash against globalization is a response to rising income inequality if inequality aversion is assumed in voters' preferences.

[7] Schafer *et al.* (2022) document that within-individual changes in income impact participation significantly, especially among the poor. For other studies that look at populism and participation, look at Leininger and Meijers (2021) and Huber and Ruth (2017).

[8] Responses to the ESS do not necessarily correspond to what people actually did in the voting booth. However, we can study the aggregate accuracy of the ESS data by aggregating it at the country level and comparing it with real-world data. Data from ParlGov allow us to compare both turnout and populist vote share of 127 elections in 32 countries from 1999 to 2018. The correlation between turnout in the ESS and actual turnout is quite high, i.e. 78%, and the correlation between ESS votes for populist parties conditional on participation and actual voting for populist parties is even higher, at 87%. However, it is important to stress that for the sake of our analysis, the availability of individual-level data is crucial, as we want to study the impact on turnout and vote choice. Individual-level observational turnout data are rarely available (e.g. Schafer *et al.* 2022). Moreover, individual voting choices are never observable in the first place. Hence the ESS represents the best dataset to answer our research question.

[9] Answers range from 1 ('Living comfortably on present income') to 4 ('Finding it very difficult on present income').

[10] For wave 8 of the ESS, we use the variables 'internet use time' and 'time spent watching/listening to/reading the news' since the questions on media use have been changed slightly.

[11] Mudde (2004) defines a party as populist if (a) it endorses the set of ideas that society is ultimately separated into two homogeneous and antagonistic groups, 'the pure people' versus 'the corrupt elite', and (b) it argues that politics should be an expression of the general will of the people.

[12] Since the turnout depression effects of an increase in economic insecurity will be shown to be significant and large, the negative sign in front of the last term determines a positive—and strong—effect on the left-hand-side variable.

[13] Note that in the first econometric specification, we do not use the synthetic index of economic insecurity, but we regress its three components to show their differential effects on the selection and second stage equation.

[14] These are some of the context variables that studies of populism (e.g. van Kessel 2015) consider critical in explaining populists' success.

[15] A chi-square test for the joint significance of the instruments in the first-stage Heckman model strongly rejects the null that the instruments are jointly equal to zero with a p-value as low as 0.0046. This suggests that the instruments do have high predictive powers.

[16] As one could be concerned that political orientation might be correlated with the likelihood of voting for a populist party, in Appendix Table A3 we replicate Table 1 excluding this control from the analysis. Results are robust to the exclusion of this control variable.

[17] As mentioned already in the Introduction, the economic insecurity variable captures the individual *perception* of her economic insecurity (this is obviously always true in survey studies of this kind), hence the sources of changes in such perception do not need to be only economic. Even cultural or social shocks can alter the perception of economic insecurity. Hence our findings by no means reflect the will to establish the primacy of economic over cultural determinants of populism.

[18] As already underlined in the Introduction, while our empirical strategy allows us to isolate properly the turnout effects, in the relationship between economic insecurity and voting for a populist party, we cannot rule out that other confounders might still play a role. To alleviate this concern, in Subsection A of the Appendix, we perform a sensitivity analysis that shows how big the omitted variables would need to be to bring the role of economic insecurity in populist votes to insignificance.

[19] Computations are described in detail in Subsection A of the Appendix.

[20] Specifically, we compute the average temperature in the country in the wave-year, divide it by the 'typical' temperature in the country (over more than 100 years), and add this as a control.

[21] The negative impact of economic insecurity on trust has already been established in other contexts: Ananyev and Guriev (2019) isolate the causal effect of economic downturns on people's trust during the 2009 recession in Russia, exploiting regional variations in the industrial structure inherited from the Soviet Union, and noticing that capital-intensive and oil-related industries are more responsive to shocks to GDP. They find that a decline in GDP causes a sizeable drop in trust in other people.

[22] To perform this analysis, we use the Stata package *medsem*, which provides a post-estimation command testing mediational hypotheses using the Baron and Kenny (1986) approach modified by Iacobucci *et al.* (2007), as well as an alternative approach proposed by Zhao *et al.* (2010) after estimating the concerned mediational model with the built-in *sem* command of Stata.

[23] Our interpretation is supported by the results of Algan *et al.* (2017), who show that in regions of Europe where unemployment increased more sharply following the 2008 crisis, trust in parties and political institutions fell more, and sentiments towards immigrants deteriorated. An IV analysis suggests that the causality runs from changes in unemployment to changes in trust and sentiments.

[24] Our pseudo-panel consists of 840 age/country/year-of-birth groups. Cohorts are relatively large, with 358 observations on average. This reassures us that measurement error in the cohort means that it is likely to be negligible. Dropping cohorts with fewer than 50 observations (4.8% of the total) does not alter the results.

[25] Appendix Table A7 also shows the robustness of these results with different measures of both trust and attitudes towards immigrants.

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APPENDIX

A.1 Descriptive statistics

Panel A of Table A1 presents descriptive statistics of the ESS data at the individual level, therefore used for the heckprobit estimations. Panel B instead presents descriptive statistics of the ESS data aggregated at the cohort level, for the pseudo-panel analysis.

TABLE A1 Descriptive statistics.

Variable	Obs.	Mean	S.D.	Min	Max
Panel A: Demand analysis					
Voted	270,777	0.78	0.41	0	1
Vote for populist party	175,521	0.15	0.36	0	1
Risk aversion	279,621	3.94	1.43	1	6
Age	287,968	49.43	17.86	18	100
Education	289,218	12.84	3.99	0	25
TV total	267,308	4.33	2.06	0	7
TV politics	280,590	2.13	1.45	0	7
Female	288,947	0.53	0.50	0	1
Right-wing	255,451	5.12	2.17	0	10
Regional population (1000s)	254,568	2561	3504	28	18,075
Unemployment	287,944	0.13	0.34	0	1
Income difficulties	283,463	1.00	0.86	0	3
Exposure to globalization	262,146	0.30	0.46	0	1
Economic insecurity (PC)	256,807	0.22	0.21	0	1
Trust in political parties	256,871	3.59	2.36	0	10
Want fewer immigrants from outside EU	279,413	2.55	0.90	1	4
Daily total rainfall	255,235	2.84	4.87	0	35
Daily mean temperature	255,118	10.05	6.81	−12	27
Panel B: Pseudo-panel analysis					
Risk aversion	6013	4.14	0.55	2	6
Age	6071	56.58	16.84	22	90
Education	6071	11.56	2.32	3	19
TV total	5978	4.36	0.82	1	7
TV politics	6071	2.29	0.63	0	7
Female	6071	0.50	0.50	0	1
Right-wing	6069	5.17	0.66	0	10
Regional population (1000s)	5109	2397	2544	118	14,375
Economic insecurity (PC)	6013	0.22	0.09	0	1
Trust in political parties	5455	3.49	1.12	0	8
Want fewer immigrants from outside EU	6071	2.65	0.39	1	4
Trust politicians	6071	3.55	1.11	1	8
Trust national parliament	6070	4.40	1.23	0	9
Trust European parliament	6070	4.35	0.84	0	9
Government satisfaction	6043	4.27	1.17	0	9
Want fewer immigrants different race/ethnicity from majority	6071	2.56	0.38	1	4
Want fewer immigrants same race/ethnicity from majority	6071	2.21	0.34	1	4
Immigrants make country worse	6071	5.23	0.91	2	9

Notes: The table shows summary statistics of the variables used in the analysis from the ESS data. The construction of the single variables is discussed in the text. 'PC' means principal component.

A.2 Populist parties

Table A2 lists parties that are defined as populist by the PopuList on the one hand, and by van Kessel (2015) and Norris and Inglehart (2019) on the other.

TABLE A2 Comparison of PopuList, van Kessel (2015) and Norris and Inglehart (2019).

Country	Party	PopuList	van Kessel (2015)	Norris and Inglehart (2019)
AT	Freedom Party (FPA)	1	1	1
AT	Alliance for the Future of Austria (BZS)	1	1	0
AT	Team Stronach (TS)	1	1	0
AT	Liste Dr Martin	1	0	0
BE	Flemish Interest (VB)	1	1	1
BE	National Front (FN)	1	1	0
BE	List Dedecker (LDD)	1	1	0
BG	National Movement Simeon the Second (NDSV)	1	1	0
BG	Attack Party (Ataka)	1	1	1
BG	Law, Order and Justice (RZS)	1	1	0
BG	Reload Bulgaria/Bulgaria Without Censorship (BBZ/BBT)	1	—	—
BG	Citizens for European Development of Bulgaria (GERB)	1	1	0
BG	Bulgarian National Movement (VMRO-BND)	1	0	1
BG	National Front for the Salvation of Bulgaria (NFSB)	1	0	1
CH	Swiss People's Party (SVP)	1	1	1
CH	Swiss Democrats (SD)	0	1	0
CH	League of Ticinesians (LdTi)	0	1	0
CH	Geneva Citizens' Movement (MCG)	0	1	0
CY	Citizens' Alliance (SYM/SYPOL)	1	—	—
CZ	ANO 2011 (ANO)	1	1	0
CZ	Freedom and Direct Democracy (SPD)	1	—	—
CZ	Public Affairs (VV)	1	1	0
CZ	Dawn of Direct Democracy (Úsvit)	1	1	1
CZ	Rally for the Republic–Republican Party of Czechoslovakia (SPR-RSC)	1	0	0
CZ	Sovereignty–Jana Bobosikova Bloc	1	—	—
DE	Party of Democratic Socialism/The Left (PDS/Linke)	1	1	0
DE	National Democratic Party (NPD)	0	0	1
DE	Alternative for Germany (AfD)	1	0	1
DK	Danish People's Party (DF)	1	1	1
DK	Progress Party (FrP)	1	0	0
EE	Res Publica (ERP)	1	—	—
EE	Conservative People's Party (EKRE)	1	—	—
ES	Podemos	1	—	1
FI	True Finns (PS)	1	1	1
FI	Blue Reform (SIN)	1	—	—
FR	National Front (FN)	1	1	1
FR	Popular Republican Movement (MPF)	0	0	1
FR	La France Insoumise	1	—	—
GB	British National Party	0	1	1
GB	UK Independence Party	1	1	0

TABLE A2 (Continued)

Country	Party	PopuList	van Kessel (2015)	Norris and Inglehart (2019)
GB	National Front (NF)	0	0	1
GR	Coalition of the Radical Left (SYRIZA)	1	1	1
GR	Independent Greeks (ANEL)	1	1	1
GR	Popular Orthodox Rally (LAOS)	1	1	1
GR	Golden Dawn (XA)	0	0	1
GR	New Democracy (ND)	0	0	1
GR	Democratic Social Movement (DIKKI)	1	0	0
HR	Croatian Party of Rights Dr Ante Starčević (HSP-AS)	0	1	1
HR	Croatian Labourists' Labour Party (HL-SR)	1	1	0
HR	Croatian Peasants Party (HSS)	0	0	1
HR	Croatian Democratic Alliance of Slavonia and Baranja (HDSSB)	1 (to 2015)	0	1
HR	Croatian Party of Rights (HSP)	1	0	1
HR	Human Shield	1	0	0
HR	Bridge of Independent Lists (MOST)	1	0	0
HR	Croatian Democratic Union (HDZ)	0	0	1
HU	FIDESZ–Hungarian Civic Alliance (FIDESZ-MPSZ)	1 (since 2002)	1	1
HU	Movement for a Better Hungary (Jobbik)	1	1	1
HU	Hungarian Justice and Life Party (MIEP)	1	0	0
IE	Sinn Féin (SF)	1	1	—
IS	Centre Party (M)	1	—	—
IS	People's Party (FIF)	1	—	—
IS	Citizens' Movement (BF)	1	1	—
IT	Forza Italia (FI)/People for Freedom (PdL)	1	1	0
IT	Northern League (LN)	1	1	1
IT	5 Star Movement (M5S)	1	1	1
IT	Brothers of Italy (Fdl)	1	0	1
LT	Labour Party (DP)	1 (only 2004)	1	0
LT	Order and Justice Party (TT)	1	1	0
LT	The Way of Courage (DK)	1	0	1
LT	National Resurrection Party (TPP)	1	0	0
LT	Lithuanian Centre Party (LCP)	1 (since 2016)	0	0
LU	Alternative Democratic Reform Party (ADR)	1	1	1
LV	All for Latvia (VL)	0	1	1
LV	New Era Party (JL)	1	0	0
LV	Zatler's Reform Party	1	0	0

TABLE A2 (Continued)

Country	Party	PopuList	van Kessel (2015)	Norris and Inglehart (2019)
NL	List Pim Fortuyn (LPF)	1	1	0
NL	Liveable Netherlands (LN)	0	1	0
NL	Freedom Party (PVV)	1	1	1
NL	Political Reformed Party (SGP)	0	0	1
NL	Socialist Party (SP)	1	0	0
NO	Progress Party (FrP)	1	1	1
PL	Self Defence (SO)	1	1	0
PL	Law and Justice (PiS)	1 (since 2005)	1	1
PL	United Poland (SP)	0	0	1
PL	Congress of the New Right (KNP)	0	0	1
PL	Kukiz'15	1	—	—
PL	League of Polish Families (LPR)	1	0	0
RO	Greater Romania Party (PRM)	1	1	0
RO	United Romania Party (PRU)	1	—	—
RO	People's Party–Dan Diaconescu (PP-DD)	1	1	1
SE	Sweden Democrats (SD)	1	1	1
SI	Slovenian National Party (SNS)	1	1	0
SI	Slovenian Democratic Party (SDS)	0	0	1
SI	The Left (L)	1	0	0
SI	List of Marjan Sarec	1	—	—
SK	Movement for a Democratic Slovakia (HZDS)	0	1	0
SK	Direction (Smer)	1 (to 2006)	1	0
SK	Slovak National Party (SNS)	1	1	1
SK	Ordinary People and Independent Personalities (OLaNO)	1	1	0
SK	Christian Democratic Movement (KDH)	0	0	1
SK	Real Slovak National Party (PSNS)	1	0	0
SK	Alliance of the New Citizen	1	0	0
SK	We are family (SR)	1	—	—
TR	National Action Party (MHP)	—	—	1

Notes: The table compares the classification of populist parties according to the PopuList with that in van Kessel (2015) as well as with that in Norris and Inglehart (2019). A dash indicates that the country and/or time period is not covered.

A.3 Excluding partisanship

In Table A3, we replicate the analysis from Table 1, excluding the control for individual political orientation. This exclusion addresses concerns that political orientation might correlate with the likelihood of voting for a populist party. Reassuringly, the results remain robust even without this control variable.

TABLE A3 Main table excluding partisanship.

	Heckprobit		Heckprobit		Heckprobit		Heckprobit	
	Populist	Vote	Populist	Vote	Populist	Vote	Populist	Vote
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Risk aversion	−0.00498	0.0118***	−0.00392	0.0110***	−0.00836	0.0135***	−0.00972	0.0146***
	(0.00633)	(0.00374)	(0.00645)	(0.00375)	(0.00683)	(0.00419)	(0.00640)	(0.00423)
ln(Age)	−0.557***	0.742***	−0.536***	0.727***	−0.615***	0.741***	−0.629***	0.760***
	(0.0721)	(0.0265)	(0.0749)	(0.0263)	(0.102)	(0.0268)	(0.0752)	(0.0268)
ln(Education)	−0.575***	0.553***	−0.590***	0.569***	−0.579***	0.546***	−0.538***	0.539***
	(0.0396)	(0.0365)	(0.0409)	(0.0362)	(0.0374)	(0.0368)	(0.0377)	(0.0373)
TV total	0.0223***	−0.0232***	0.0228***	−0.0235***	0.0222***	−0.0211***	0.0185***	−0.0216***
	(0.00586)	(0.00424)	(0.00586)	(0.00425)	(0.00482)	(0.00405)	(0.00514)	(0.00404)
TV politics	−0.0516***	0.0670***	−0.0512***	0.0674***	−0.0455***	0.0575***	−0.0406***	0.0568***
	(0.00815)	(0.00623)	(0.00829)	(0.00626)	(0.00852)	(0.00649)	(0.00798)	(0.00635)
Unemployment	0.161***	−0.151***						
	(0.0242)	(0.0172)						
Income difficulties	0.209***	−0.166***						
	(0.0133)	(0.0104)						
Exposure globalization	0.0902***	−0.118***						
	(0.0292)	(0.0217)						
Economic insecurity (PC)			0.852***	−0.733***	0.764***	−0.664***	0.751***	−0.659***
			(0.0498)	(0.0401)	(0.0531)	(0.0418)	(0.0492)	(0.0426)
Trust in political parties					−0.0736***	0.0509***	−0.0696***	0.0496***
					(0.00878)	(0.00371)	(0.00584)	(0.00371)
Few immigrants from non-EU							0.121***	−0.0316***
							(0.0220)	(0.00756)
Controls, wave FE, country FE	Yes		Yes		Yes		Yes	

TABLE A3 (Continued)

	Heckprobit		Heckprobit		Heckprobit		Heckprobit	
	Populist	Vote	Populist	Vote	Populist	Vote	Populist	Vote
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rho	−0.880		−0.876		−0.955		−0.938	
Cluster standard error	Region		Region		Region		Region	
Countries	With P		With P		With P		With P	
Observations	172,179		172,179		160,462		156,146	
Censored observations	61,148		61,148		56,560		54,282	
Selection								
Rain		−0.00988***		−0.00987***		−0.0106***		−0.0110***
		(0.00229)		(0.00229)		(0.00262)		(0.00242)
Rain × South		−0.00305		−0.00300		−0.000180		0.000542
		(0.00711)		(0.00719)		(0.00569)		(0.00584)
Average temperature		0.0132**		0.0133**		0.0139**		0.0152***
		(0.00538)		(0.00546)		(0.00664)		(0.00582)
Average temperature × South		−0.0146		−0.0150		−0.0146*		−0.0137
		(0.0103)		(0.0103)		(0.00878)		(0.00901)

Notes: The table shows Heckman probit estimates of the decisions to vote (Vote) and to vote for a populist party conditional on participation (Populist). Left-hand-side variables: a dummy if a voter has chosen a populist party in the column Populist, and a dummy if he has participated in the election in the column Vote. The excluded instrument in the populist regression is an indicator of weather conditions on election day. All regressions include country and wave fixed effects. Robust standard errors clustered at the region level are shown in parentheses. 'PC' means principal component. 'With P' means with a populist party. ***, **, * indicate significant at 1% or less, 5%, 10% confidence levels, respectively.

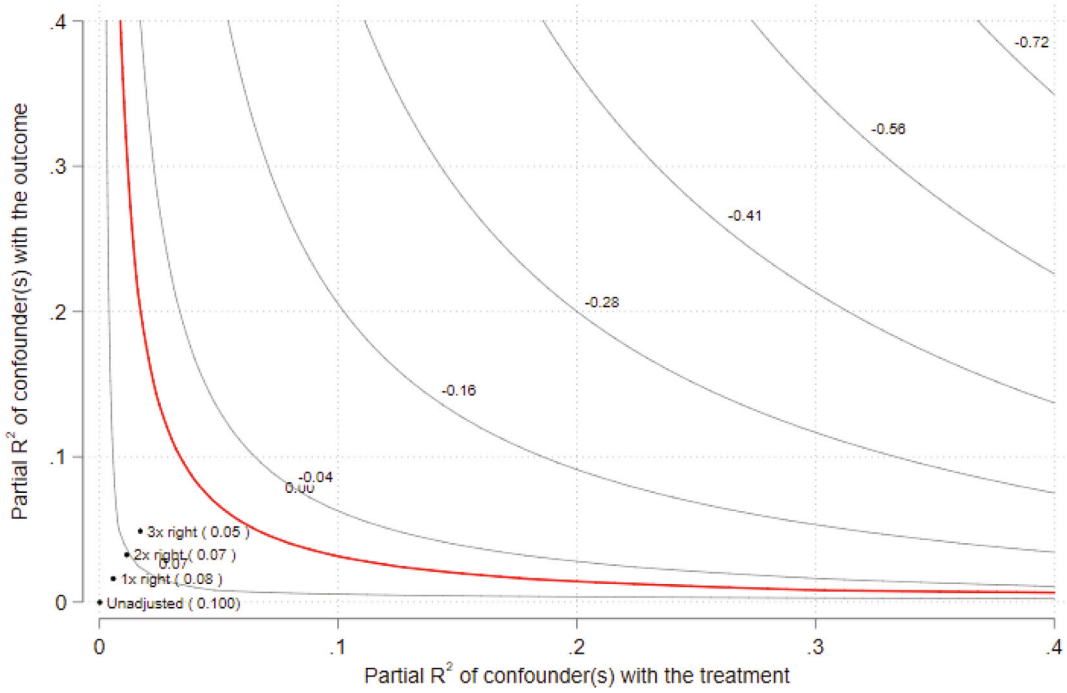

FIGURE A1 Sensitivity analysis. *Notes*: Sensitivity analysis on the OLS regression of economic insecurity on populist vote.

A.4 Sensitivity analysis

To alleviate concerns about omitted variable problems, we performed a sensitivity analysis on the OLS regression of economic insecurity on populist vote. The analysis tells us how important any omitted variables should be to bring the economic insecurity coefficient to zero. The graph in Figure A1 summarizes the main conclusion: a possible omitted variable should explain about 6% of the variability of both economic insecurity and populist vote. To give an idea of the magnitude, a possible omitted variable that had an impact equal to three times the variable on political orientation would not be sufficient to bring the economic insecurity coefficient to zero. For details of the technique, refer to Cinelli and Hazlett (2020).

A.5 Computations of magnitudes

Table 2 presents the left-hand side of equation (1) in column (1), while the second term of the right-hand side is reported in column (2). Letting σ_x denote the standard deviation of any independent variable x, when evaluating the effects of a one-standard-deviation change in x, equation (1) becomes

$$\sigma_x \pi_x^C / \pi^C = \sigma_x \pi_x^J / \pi^J - \sigma_x \pi_x^V / \pi^V.$$

Therefore we need estimates for σ_x, π_x^C and π^C to estimate the left-hand side, and σ_x, π_x^V and π^V to estimate the second term of the right-hand side, that is, the neglected role of turnout. Remember that x indicates economic insecurity (EI), trust (T) or attitudes towards immigrants (AI).

We have $\pi^C = 0.154$, $\pi^V = 0.783$, $\sigma_{EI} = 0.209$, $\sigma_T = 2.362$ and $\sigma_{AI} = 0.901$, taken from the descriptive statistics (Table A1).

Here, π_x^C and π_x^V represent the marginal effects of our three x variables for the second stage (populist vote conditioning on voting, C) and, respectively, the selection equation (voting, V), estimated from our most comprehensive specification, which includes all of them together (columns (7) and (8) of Table 1). Obtaining the values directly from Stata, these are $\pi_{EI}^C = 0.111$, $\pi_T^C = -0.012$, $\pi_{AI}^C = 0.027$, $\pi_{EI}^V = -0.214$, $\pi_T^V = 0.015$ and $\pi_{AI}^V = -0.009$.

The first entry of Table 2 (0.15) is $\sigma_x \pi_{EI}^C / \pi^C$ $(0.209 \times 0.111/0.154)$, and the second entry (0.057) is $-\sigma_{EI}\pi_{EI}^V / \pi^V$ $(-0.209 \times (-0.214)/0.783)$. The ratio of the two gives us the 38% described in the text.

The same procedure can be repeated for all the other components of the table.

A.6 Robustness

Table A4 presents the estimates of the instruments relative to the robustness regressions.

A.7 Linear probability model

Table A5 presents the results of three different linear probability models. In other words, we run three OLS regressions with binary outcomes: votes for each party (Yes/No), votes for populist parties (Yes/No), and votes for non-populist parties (Yes/No). The coefficients are negatives, with magnitudes in line with what theory predicts: the economic insecurity coefficient when we consider only the vote for populist parties is the lowest of the three (column (3)), followed by the coefficient when we consider all parties (column (1)) and the coefficient when we consider only non-populist parties (column (2)).

TABLE A4 First-stage robustness.

	Vote	Vote	Vote
	(1)	(2)	(3)
Rain	−0.00164	−0.000783	−0.00678**
	(0.00248)	(0.00258)	(0.00332)
Rain × South	−0.00594	−0.0160*	−0.0165**
	(0.00509)	(0.00824)	(0.00804)
Average temperature	0.0166***	−0.00456	0.0193***
	(0.00563)	(0.00623)	(0.00644)
Average temperature × South	0.00773	0.0216	−0.00727
	(0.00904)	(0.0157)	(0.0118)
Wave FE	Yes	No	Yes
Country FE	Yes	No	Yes
Wave × Country FE	No	Yes	No
Cluster standard error	Region	Region	Region
Countries	All	With P	With P (no new P)

Notes: The table shows the instruments in the voter turnout regressions in Table 3 of the main text. 'PC' means principal component. 'With P' means with a populist party, and 'no new P' means no new party.

TABLE A5 Linear probability models.

	Vote (1)	Vote (2)	Vote (3)
Economic insecurity	−0.104***	−0.0367***	−0.122***
	(0.01)	(0.01)	(0.01)
Observations	198,144	53,076	161,186
R-squared	0.088	0.224	0.120
Parties	All	Populists	Non-populists
Controls, wave FE, country FE	Yes	Yes	Yes

Notes: Robust standard errors are shown in parenthesis.
***, **, * indicate significant at 1% or less, 5%, 10% confidence levels, respectively.

A.8 Weather control

In Table A6, we replicate the main table by adding a new control to alleviate concerns about our identification strategy. The concern is that the weather on the day of the election may be indicative of the weather of a longer time period in a country. Hence the fact that it was particularly cold on the day of the election in a given country could proxy for the fact that, more generally, this country experienced an unusually cold period. Particularly dry or cold periods, however, would affect various industries differently, and therefore the economy as a whole, which would violate the exclusion restriction that the instrument affects only turnout, but not voting conditional on turnout. We collected data on average temperature by country for the years 1901 to 2021 from the official World Bank website (Climate Change Knowledge Portal) and built a new control as the average temperature in the country in the wave–year, divided by the long-term average temperature in the country. The coefficients of interest remain almost identical to those in Table 1, while the new control impacts on the probability of voting (i.e. a temperature higher than the 'typical' temperature of the country increases the propensity of people to vote), but not on the probability of voting populist.

A.9 Pseudo-panel regressions

Columns (1) and (2) of Table A7 report controlled fixed effect pseudo-panel regressions of trust in political parties and attitudes to non-EU immigrants on our summary measure of economic insecurity and individual time-varying controls (risk aversion, age, exposure to the media) as well as country-specific time effects common to all cohorts. Economic insecurity has a negative and highly significant effect on trust in political parties, and a positive and highly significant effect on hostility towards immigrants. The estimates show that a one-standard-deviation increase in economic insecurity lowers trust in political parties by 7.1% of its sample standard deviation and, on the other hand, increases hostility to non-EU immigration by 5% of its sample standard deviation.

The rest of Table A7 expands the evidence by regressing several measures of trust (in politicians, in the national parliament and in the European parliament, and an index of satisfaction with the government) and attitudes towards immigrants (preference for fewer immigrants of different race/ethnicity, for fewer immigrants of same race/ethnicity, agreement that immigrants make the country worse). Economic insecurity causes people to lose confidence in politics, institutions and governments, and to increase aversion to immigrants across the board.

TABLE A6 Heckman probit estimates of populist party vote and participation in voting.

	Heckprobit		Heckprobit		Heckprobit		Heckprobit	
	Populist	Vote	Populist	Vote	Populist	Vote	Populist	Vote
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Risk aversion	−0.00229	0.0145***	−0.00136	0.0140***	−0.00232	0.0156***	−0.00319	0.0170***
	(0.00809)	(0.00391)	(0.00811)	(0.00390)	(0.00853)	(0.00414)	(0.00869)	(0.00421)
ln(Age)	−0.289***	0.762***	−0.276***	0.751***	−0.284***	0.768***	−0.305***	0.781***
	(0.0764)	(0.0268)	(0.0735)	(0.0267)	(0.0725)	(0.0274)	(0.0748)	(0.0278)
Average temperature/Typical temperature	−0.0928	0.652***	−0.106	0.655***	−0.116	0.612***	−0.124	0.623***
	(0.114)	(0.153)	(0.114)	(0.154)	(0.112)	(0.146)	(0.114)	(0.145)
ln(Education)	−0.427***	0.528***	−0.442***	0.541***	−0.428***	0.526***	−0.376***	0.521***
	(0.0563)	(0.0361)	(0.0552)	(0.0360)	(0.0537)	(0.0372)	(0.0562)	(0.0378)
TV total	0.0168**	−0.0214***	0.0175**	−0.0216***	0.0184**	−0.0197***	0.0135*	−0.0198***
	(0.00730)	(0.00456)	(0.00724)	(0.00453)	(0.00717)	(0.00443)	(0.00719)	(0.00435)
TV politics	−0.0255***	0.0565***	−0.0254***	0.0567***	−0.0196**	0.0495***	−0.0159*	0.0490***
	(0.00857)	(0.00633)	(0.00850)	(0.00636)	(0.00851)	(0.00650)	(0.00856)	(0.00640)
Unemployment	0.143***	−0.166***						
	(0.0326)	(0.0185)						
Income difficulties	0.206***	−0.153***						
	(0.0149)	(0.0107)						
Exposure globalization	0.0512	−0.118***						
	(0.0347)	(0.0228)						
Economic insecurity (PC)			0.802***	−0.718***	0.715***	−0.656***	0.695***	−0.650***
			(0.0657)	(0.0414)	(0.0636)	(0.0427)	(0.0664)	(0.0432)
Trust in political parties					−0.0778***	0.0477***	−0.0714***	0.0465***
					(0.00623)	(0.00372)	(0.00621)	(0.00377)
Few immigrants from non-EU							0.145***	−0.0292***
							(0.0178)	(0.00799)

TABLE A6 (Continued)

	Heckprobit		Heckprobit		Heckprobit		Heckprobit	
	Populist	Vote	Populist	Vote	Populist	Vote	Populist	Vote
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Controls, wave FE, country FE	Yes		Yes		Yes		Yes	
Rho	−0.352		−0.363		−0.335		−0.329	
Cluster standard error	Region		Region		Region		Region	
Countries	With P		With P		With P		With P	
Observations	155,506		155,506		145,877		142,849	
Censored observations	49,509		49,509		46,421		45,099	
Selection								
Rain		−0.00581**		−0.00586**		−0.00567*		−0.00586*
		(0.00294)		(0.00289)		(0.00320)		(0.00326)
Rain × South		−0.0199**		−0.0196**		−0.0186**		−0.0182**
		(0.00839)		(0.00838)		(0.00834)		(0.00812)
Average temperature		0.0177***		0.0178***		0.0201***		0.0202***
		(0.00578)		(0.00578)		(0.00599)		(0.00603)
Average temperature × South		−0.00787		−0.00820		−0.00674		−0.00344
		(0.0118)		(0.0118)		(0.0117)		(0.0116)

Notes: The table shows Heckman probit estimates of the decisions to vote (Vote) and to vote for a populist party conditional on participation (Populist). Left-hand-side variables: a dummy if a voter has chosen a populist party in the column Populist, and a dummy if he has participated in the election in the column Vote. The excluded instrument in the populist regression is an indicator of weather conditions on election day. All regressions include country and wave fixed effects. Robust standard errors clustered at the region level are shown in parentheses. 'PC' means principal component. 'With P' means with a populist party. ***, **, * indicate significant at 1% or less, 5%, 10% confidence levels, respectively.

TABLE A7 Trust and attitude towards immigrants—pseudo-panel.

	Trust parties	Few immigrants from non-EU	Trust politicians	Trust national parliament	Trust European parliament	Government satisfaction	Few immigrants from different race/ethnicity from majority	Few immigrants from same race/ethnicity from majority	Immigrants make country worse
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Risk aversion	−0.0421	0.00444	0.0283	0.0623	−0.0482	0.00601	−0.00888	−0.00765	0.0214
	(0.0341)	(0.0127)	(0.0365)	(0.0446)	(0.0443)	(0.0257)	(0.0171)	(0.0158)	(0.0310)
ln(Age)	0.0400	−0.0707	0.117	0.00704	−0.473	−0.774***	0.200***	0.301***	−0.130
	(0.208)	(0.0561)	(0.198)	(0.357)	(0.331)	(0.162)	(0.0720)	(0.0755)	(0.285)
ln(Education)	0.326***	−0.182***	0.446***	0.643***	0.518**	0.386*	−0.208***	−0.264***	−0.778***
	(0.0843)	(0.0500)	(0.0712)	(0.0635)	(0.198)	(0.214)	(0.0522)	(0.0388)	(0.205)
TV total	−0.0457***	0.0182***	−0.0504***	−0.0284	−0.0554**	−0.0419***	0.0116**	0.00822	0.0527***
	(0.0108)	(0.00551)	(0.0119)	(0.0168)	(0.0230)	(0.0128)	(0.00462)	(0.00504)	(0.0154)
TV politics	0.101***	−0.0172	0.0655***	0.0719**	−0.00259	0.0152	0.00789	−0.0220	−0.0711**
	(0.0226)	(0.0122)	(0.0229)	(0.0283)	(0.0409)	(0.0278)	(0.0136)	(0.0146)	(0.0313)
Economic insecurity (PC)	−0.901***	0.198**	−0.950***	−1.144***	−0.472**	−1.490***	0.293***	0.293***	0.533***
	(0.171)	(0.0791)	(0.162)	(0.243)	(0.201)	(0.162)	(0.0831)	(0.0811)	(0.161)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wave × Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of cohorts	840	840	840	840	840	840	840	840	840
Countries	All	All	All	All	All	All	All	All	All
Observations	4591	4955	4955	4955	4955	4927	4955	4955	4955

Notes: The table shows pseudo-panel fixed effect regressions of trust and attitudes towards immigrants on economic insecurity and controls. Left-hand-side variables: several measures of trust towards (national and European) institutions, and attitudes towards immigration (more details in the text). All regressions include country × wave fixed effects. Robust standard errors clustered at the cohort level are shown in parentheses. 'PC' means principal component.

***, **, * indicate significant at 1% or less, 5%, 10% confidence levels, respectively.

TABLE A8 Weather interaction.

	Probit	LPM
	Populist vote	Populist vote
	(1)	(2)
Favourable weather	0.0533	0.00726
	(0.0467)	(0.00838)
Economic insecurity	0.489***	0.0986***
	(0.0508)	(0.0111)
Favourable weather × Economic insecurity	0.432***	0.122***
	(0.108)	(0.0311)
Observations	111,318	112,037
Controls, wave FE, country FE	Yes	Yes

Notes: Robust standard errors clustered at the region level are shown in parentheses.
***, **, * indicate significant at 1% or less, 5%, 10% confidence levels, respectively.

A.10 Weather interaction

In this subsection, we run a regression mimicking the second stage of our heckprobit, but interacting the economic insecurity variable with a dummy summarizing weather conditions. The dummy is set equal to 1 if precipitation on the election day is below the median precipitation within the country and at the same time temperature on the election day is above the median temperature within the country. These two conditions represent favourable weather conditions that, according to our theory, increase turnout. Table A8 shows that, broadly consistent with our exclusion restriction, favourable weather conditions do not matter for voting populist, but they magnify the populist vote.