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Abstract

What characterizes regions where right-wing populist parties are relatively successful? A prominent hypothesis proposed in recent literature claims that places that are "left behind" or "do not matter" are a breeding ground for the rise of populism. We re-examine this hypothesis by analyzing the rise of populism in Germany. Our results suggest that the high vote shares of populist parties are not only associated with low regional levels of welfare as such, but also with the long-term decline of a region's relative welfare. Hence, it is not the regions that do "not matter" that are most prone to the rise of populism, but the regions that once mattered, but are in long-term decline. Moreover, we find that regional knowledge represents an important channel through which the historical decline in wealth explains voting behavior in German regions.

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1. Introduction

The alarming rise of right-wing populist parties and politicians in many countries during the last decade has induced diverse attempts to explain these developments. Although the details of populist movements show considerable differences across countries, they have at least three features in common (Brubaker 2017; Mudde 2004). First, they are 'anti-system' parties that regard anyone who opposes them as 'uninformed', 'corrupt' or 'on top' attempting to impose certain values on society. Second, populist movements tend to be opposed to immigration. Third, they are nationalistic in the sense of regarding other countries and outside institutions as 'enemies'.

One key recognition of many studies that analyze recent populist movements is that the strength of populist parties considerably varies across regions (Broz, Frieden & Weymouth 2021; Essletzbichler, Disslbacher & Moser 2018: Rodríguez-Posé 2018, 2020; Los et al 2017). For example, studies that investigated the 2016 Brexit referendum in the UK (Los et al. 2017; Essletzbichler, Disslbacher & Moser 2018) found huge regional variations in the voting patterns that led to Britain's exit from the EU. Pronounced regional differences in voters' preferences for populist parties are also found for elections in many other countries (Rodríguez-Pose 2020). These regional differences suggest that support for right wing populist parties have strong territorial foundations (Rauhut, 2018, 109). Investigating the regional pattern of votes for populist parties in a number of countries, Rodríguez-Posé (2018, 2020) discovers that many of the regions that support populist parties have been in an economic decline for some time. He concludes that this decline has engendered a feeling of being left behind among the residents of these regions. In his view, voting for populist parties can be regarded "the revenge of the places that don't matter" (Rodríguez-Posé 2018, 2020).

This paper analyzes differences in voters' preferences across German regions. Germany is a particularly interesting case for such an analysis because of the country's more than forty years of separation into two countries, East Germany and West Germany. This post-WWII bifurcation created diverging economic developments, mentalities and pronounced differences in voting behavior, with considerably higher shares of votes for right-wing populist parties

in the East. We are particularly interested in determining if the current level of economic development and welfare is a more important factor in voting behavior when compared to historical developments. We are also interested in determining if East-West differences in voting behavior have common sources.

Our results indicate that a key factor determining voting behavior at the regional level is not the region's short and/or medium run economic performance, but the long-term relative economic decline over the course of the previous ninety years. Although this explanation holds true for both the East and the West, it is especially salient in explaining the higher number of votes for right-wing populist parties in the East. A possible reason for this is the economic woes experienced in the East after the post-socialism transformation to a market-based economy.

The article proceeds as follows. In the next section we review hypotheses and previous evidence on the factors that influence voting patterns for populist parties. Section 3 then describes the rise of right-wing populism in Germany and specificities of the German case. A description of data, variables and the empirical strategy follows in Section 4. The results of the empirical analysis are presented in Section 5, and Section 6 provides discussions and conclusions.

2. The rise of right-wing populism: previous evidence and a new explanation

The cultural backlash perspective suggests that the rise of right-wing populism is primarily the result of a cultural counter-revolution engendered by a fear that the progressive values held by younger generations will take over cultural and political institutions (Norris & Inglehart 2019; Noury & Roland 2020). Other hypotheses focus on economic insecurity, and suggest that short-term recessions and long-term structural changes in the economy create groups of losers who, left behind by modernization and globalization, favor populist parties (Rodríguez-Pose 2018; Van Hauwaert et al. 2019; Becker et al. 2017; bin Zaid & Joshi 2018). Rodríguez-Pose (2018, 2020) claims that populist voters are heavily concentrated in regions facing persistent poverty, economic decay and lack of opportunities (see also McCann 2020; Broz, Frieden & Weymouth 2021). Other studies point out that it is often erroneous beliefs that drive voter behavior. For example, many studies find that it is often the places with the lowest numbers of migrants that tend to fear immigration most and, consequently, vote against the system.

Similarly, populist votes driven by inequality are frequently based more on perceptions of inequality rather than inequality in real terms (Pastor & Veronesi 2020; McCann 2020). Although this perception may be skewed, those who perceive themselves as being at the bottom or unfairly treated tend to feel threatened and insecure, creating less trust in the system. Those who hold these beliefs tend to reject arguments that rebut their perceptions (e.g., Kuziemko et al. 2015; Agranov et al. 2020).

Becker et al. (2017) combine a multitude of regional data sources in multivariate analyses to highlight that regional support for Brexit was related to: i) dependence on manufacturing jobs, ii) low incomes, iii) high unemployment and iv) lower educational levels. These factors also explain regional variations in France for support of a politician who has been described as having populist leanings, "Marine" Le Penn. Similar findings reported in a study about French regions by bin Zaid & Joshi (2018) corroborate the view that unemployment is a significant factor behind regional voting patterns for right-wing populist parties. An analysis by Stockemer (2017) reveals that it is not high unemployment per se, but an increase in unemployment that encourages support for far-right populist parties. Essletzbichler et al (2018), Becker et al. (2017) and bin Zaid & Joshi (2018) suggest that people in regions with high shares of employees in old manufacturing industries are more likely to vote for populist parties because these regions are particularly exposed to globalization and the pressures of international competition. It is from the findings of these analyses that Rodríguez-Pose (2018, 2020), as mentioned in the introduction, concludes that regionally high shares of votes for right-wing populist parties indicate a "revenge of places that do not matter".

Since economic decline has occurred in many historical periods and many different regions, we are curious why the surge in the share of populist votes in regions with low income per capita, high unemployment, and a high proportion of people with low education levels is a relatively recent phenomenon. Why do voters in a region that never mattered prefer populist parties today, but did not show such preferences in the past? A general explanation could be that historically unfavorable regional conditions are now interacting with more recent

global and national trends (like increasing globalization and refugee crises) in a way that fuels the emergence of populist parties (Dippel et al. 2015).

A region-specific explanation for the recent surge of populism could be that it is not the places that do not matter as such that are prone to breed voters who favor populist parties, but it is those places that were economically strong in the past but have gradually declined over time. From a theoretical point of view, the mechanism leading to current voting behavior may be a place-based collective memory of past economic success, leadership and economic well-being, compared to a less favorable current situation. This sense may be reinforced if regional decline is not perceived as the result of an internal weakness, but as being mainly driven by external developments.

The concept of a place-based collective memory is grounded in the idea that places typically have their own meaning, a social construct that reflects collective histories, memories, and identities (Gieryn 2000; Zukin 2011; David et al. 2005). In this respect, place is also the interplay of location, meaning, and material form (Gieryn 2000). Jones et al. (2020, 212), for example, state: "Material forms are central to the social construction of place, underpinning sign systems, enabling human interaction, and engendering the relative permanence that defines institutions and provides stability and meaning". Hence, one may expect that, rather than the current economic situation or more recent decline, it is the long-term decline of regions that is more informative about why people in these regions vote for populist parties.

3. Populism and long-term economic decline across German regions

3.1 Emergence of the AfD and recent elections in Germany

The AfD party was founded in 2013 and represents recent right-wing populism in Germany. The early members of the AfD party were disillusioned members of the German elite, including academics, lawyers, doctors, and managers. At this early stage of development, the rhetoric of the AfD did not significantly differ from the conservative CSU (*Christlich-Soziale Union*). Its membership was quite center-oriented, and on a traditional left-right axis it was located to the left of the NPD (*Nationaldemokratische Partei Deutschlands*) (Arzheimer 2015). In 2015 there was an ideological shift within the party towards right-wing anti-immigration and

anti-Islamic sentiments. This ideological shift coincided with the refugee crisis that occurred in the summer of 2015, when over one million refugees arrived in Germany and triggered xenophobic feelings among the German people. The party's rhetoric focused increasingly on anti-migration and xenophobic views (Arzheimer & Berning 2019). Overall, a combination of various economic and political factors contributed to the transformation of the party agenda, and as a consequence, its main clientele.

In the 2017 Federal elections, the AfD attained more than 12% of total votes nationwide, and was the first new party since the 1990s to gain seats in the German Bundestag (Arzheimer & Berning 2019). The success of the AfD did, however, considerably vary across regions. The highest vote shares of more than 35% were received in some Eastern German regions, with the strongest level of support occurring in six counties in the State of Saxony. Figure 1 shows the striking East-West divide. The success of the AfD in the Federal elections in 2017 was, however, not limited to East Germany, the party also received high shares of votes in a number of West German regions, particularly in some of the counties in Bavaria, Baden-Wurttemberg and in parts of the Ruhr area.

The overall geographic pattern of the AfD's electoral success suggests something more than a "revenge of the village" phenomenon, as Förtner et al. (2020) put it, and draws into question the idea hypothesized by some authors that describes voting patterns in Germany as larger cities vs. the rest of the country (Förtner et al. 2020; Rodden et al. 2019). Figure 1 shows that right-wing strongholds often include urban centers, especially in West German regions, whereas the "village" pattern seems to apply more to East German regions.

less than 8 (45)	8-9 (45)	9-10 (44)	10-11 (45)	11-12 (45)
12-14 (44)	14-16 (45)	16-20 (45)	more than 20 (44)	
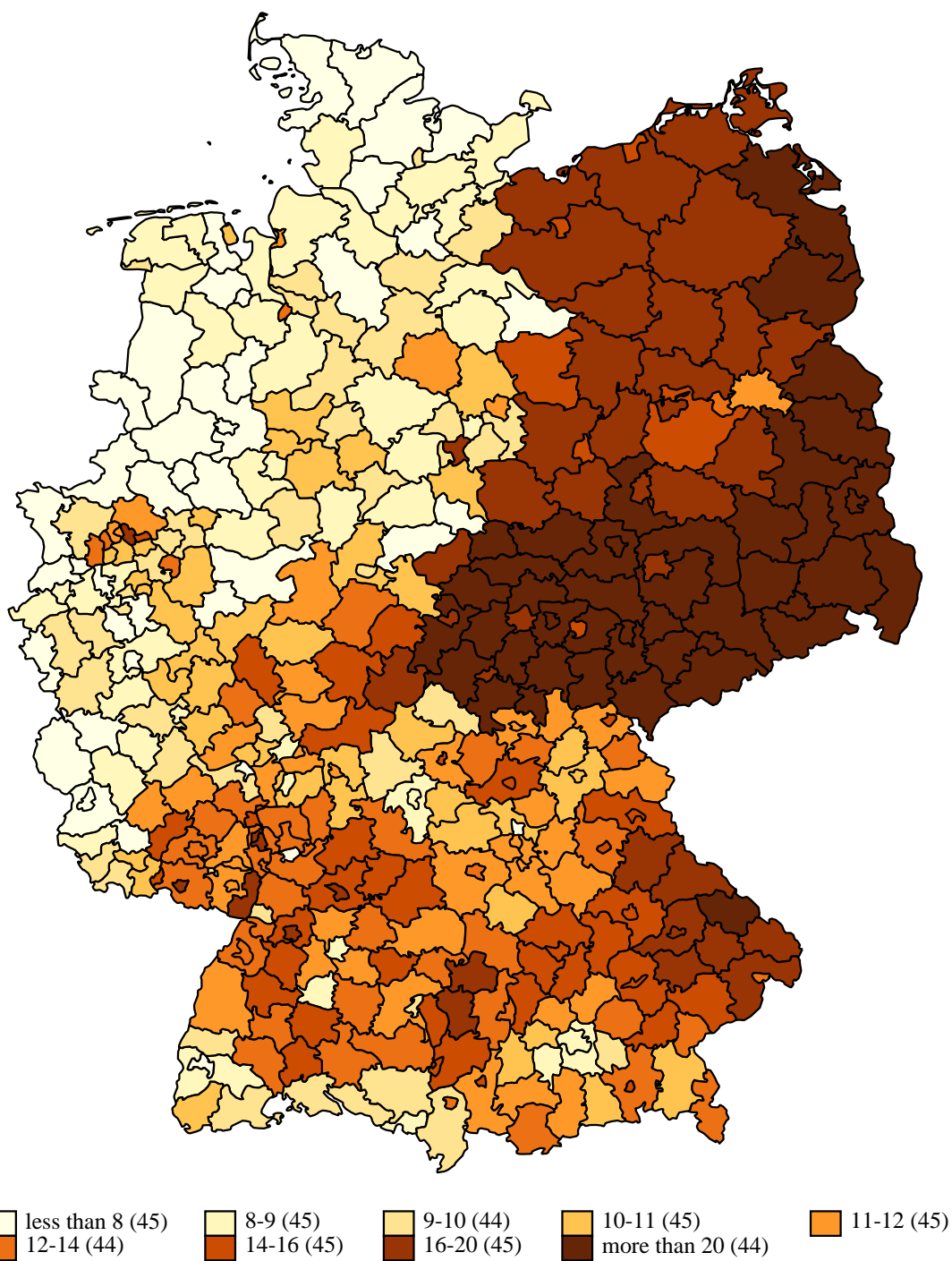
Note: Vote share is calculated as the number of second votes over the turnout. Numbers in brackets in the legend indicate the number of regions in each category. The map comprises 401 counties in total.

Figure 1: AfD election results for the 2017 national parliamentary elections to the Bundestag

3.2 Long-term economic decline and populist voting: Why Germany is an interesting case study

The degree of long-term economic successes and declines of German regions has to do with the country's history. Although there are a number of historical realities that influence modern day Germany, World War II is perhaps the most striking. After the war, the Eastern part of Germany came under Soviet rule, endured four decades of socialism with a centrally planned economy, and then underwent a radical transformation to a market economy that brought about massive unemployment and economic dislocation. This historical development was exogenous in the sense that the local population had no control over it. East German regions became part of the socialist regime because of their geographical proximity to the Soviet Union, and negotiations that occurred during the Potsdam Conference in 1945. These regions could neither select into Soviet rule, nor could the Soviets select regions based on their economic performance (for details, see Moseley 1950).
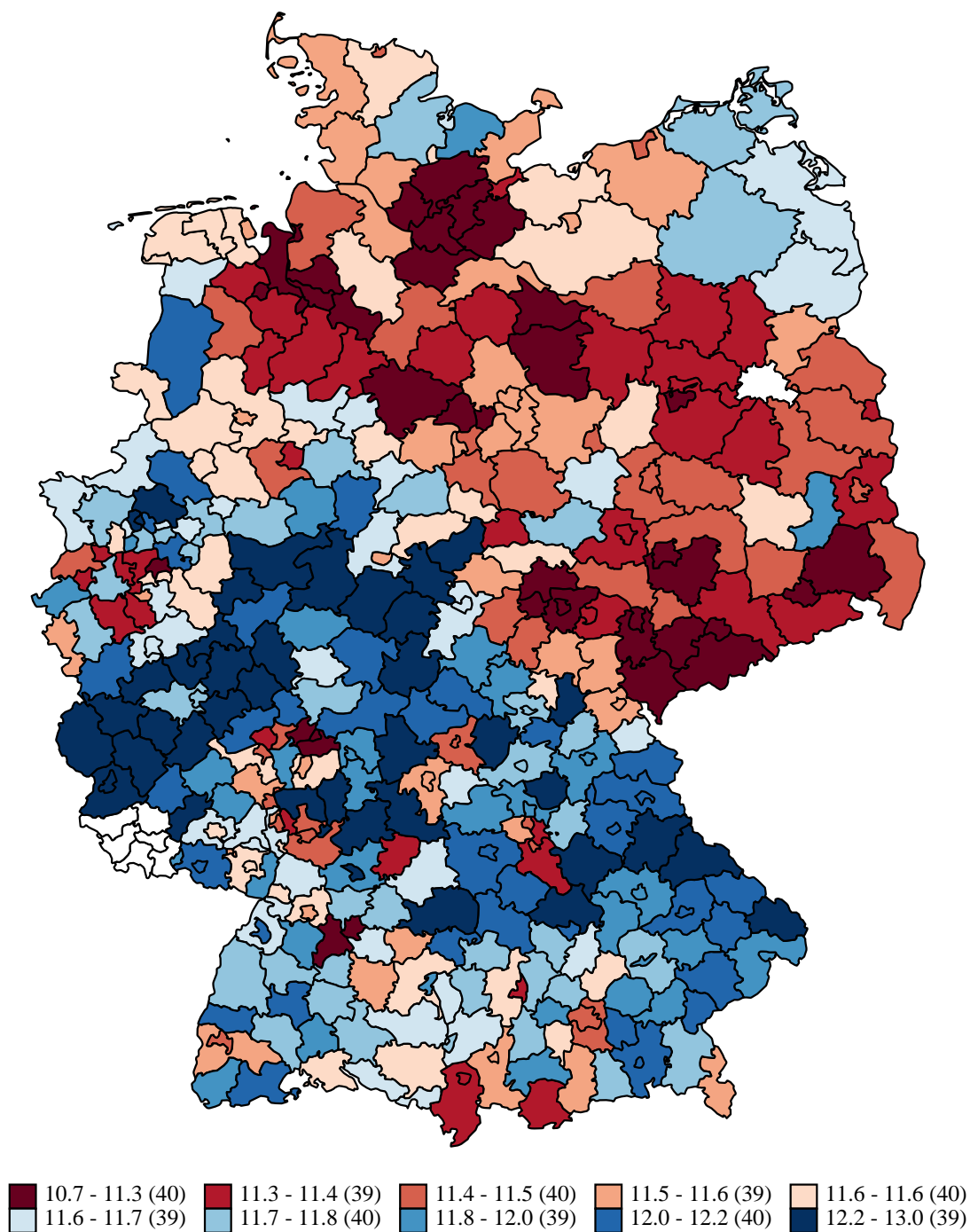
The assignment of regions to East or West Germany caused tremendous turbulence in their relative income ranking. Before the division of Germany into two separate nations, for example, the State of Saxony was one of the richest regions in Europe (Tipton 1976; Sleifer 2006). After being assigned to the socialist German Democratic Republic (GDR), important firms located in Saxony, such as Audi and BMW, relocated to West Germany. This trend led to a massive exodus of the local population including a highly qualified workforce, resulting in the largest peaceful economic dislocation in the 20th century (Burda & Hunt 2001). Saxony's economic prospects suffered under socialism, and involved the dismantling of significant industrial facilities by the Soviets. The radical transformation to a market economy in the early 1990s was a further blow that induced high levels of unemployment. While some of Saxony's regions are recovering, they are still far from regaining their former status as leading centers of economic prosperity, and the average income level is still below the West German average.

We can only speculate how Saxony would have developed without German division, four decades of socialism, and radical transformation to a market economic system, but it is obvious that historical developments

exogenously influenced the long-term decline of its economic status. Awareness of this decline among the regional population might be particularly frustrating, since it can be largely attributed to external events. This frustration might be the source of populist voting trends in Saxony, and demonstrate dissatisfaction with current politics that are blamed for the long-term developments.

This interpretation is supported by the fact that the State of Saxony had the highest vote share for populist parties in the 2017 Federal election. For instance, although Dresden and Bautzen had one of the highest levels of income per capita in 1925, these places are now among the most avid AfD supporters. The fact that Saxony's economic development after reunification is better than other East German regions, implies that its support of the AfD cannot be explained by the economic development of the past two decades. The explanation for high shares of AfD votes in the region can, however, be explained if the long-term decline looms larger than the short-term development after reunification. Figure 2 shows the change of regional income per capita between 1925 and 2015, and pinpoints a relatively modest income growth in Saxonian regions, especially when compared to many areas in West Germany. This anecdotal evidence is an excellent example of how a region that was once the richest in Europe, but now has an income level far below the current national average, is a breeding ground for populism.

The Ruhr area in Western German also includes several regions with relatively high AfD vote shares. This serves as an example that this type of explanation may not be limited to the East. Two neighboring cities, Düsseldorf (close to the Ruhr area) and Duisburg (within the Ruhr area), both had a relatively high levels of income in 1925. While Düsseldorf continues to be a prosperous metropolis, Duisburg, a former center of the steel industry, experienced a severe decline. The fact that Duisburg has a higher percentage of votes cast for the AfD (13%) than Düsseldorf (8%), provides additional anecdotal evidence supporting our interpretation.

Legend:

| 10.7 - 11.3 (40) | 11.3 - 11.4 (39) | 11.4 - 11.5 (40) | 11.5 - 11.6 (39) | 11.6 - 11.6 (40) |
| 11.6 - 11.7 (39) | 11.7 - 11.8 (40) | 11.8 - 12.0 (39) | 12.0 - 12.2 (40) | 12.2 - 13.0 (39) |

Note: Change in income per capita is calculated as a difference between the natural logarithms of income per capita in 2015 and income per capita in 1925. Due to differences in monetary systems, the categories should be interpreted as percentiles of the growth rate distribution. The first category (dark brown) represents the counties in the 10th percentile (decline). The last category (dark blue) represents the counties in the 90th percentile (growth). Numbers in brackets in the legend indicate the number of counties in each category. The map comprises 401 counties in total. Berlin and Saarland are excluded; thus, statistics are provided for 394 counties.

Figure 2: Income per capita change between 1925 and 2015

In general, we expect that voters in regions that were relatively rich before World War II, but declined in the long run are more prone to vote for populist parties today. We also expect that the long-term decline of regions has more explanatory power than the current regional income level.

4.   Data and method

4.1 Data on voting and regional income

Data on AfD election results from the 2017 Federal election are retrieved from the official internet site of the Federal Returning Officer.[1] We use data from the 2017 election because it was the first election when the AfD successfully gained seats in the German Federal Parliament. Although the AfD participated in 2013 elections, it did not receive enough votes to gain seats in the Bundestag, and its right-wing populist agenda had not yet been developed.

Historical income data stem from the first assessment year when statistics for taxable income were reported in a consolidated form, 1925. These statistics were published after the adoption of a financial reform that aimed at a fairer distribution of the tax burden, and laid a foundation for the modern system of income and corporate income taxation. This historical income data is digitalized and converted to present-day administrative borders using the Statistics of the German Empire (Statistisches Reichsamt 1929). For present-day income measure, we use official statistics about the disposable income of private households, published as a part of the National Accounts of the Federal States (Statistische Ämter des Bundes und der Länder 2018).

We use the 1925 data because it reflects a point in time before German division. Hence, it allows us to calculate long-term economic decline over the period during which exogenous shocks affecting the regional income distribution took place. Income data from 1939, the year directly before the outbreak of World War II, may be regarded an even more appropriate starting point for assessing long-term regional economic development, but no such data is available. An advantage of using data from the year 1925 is that the eventual impact of the Nazi

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[1] https://www.bundeswahlleiter.de/en/index.html

regime and their specific economic policies do not affect the regional income distribution.[2] Data for all variables are aggregated on the level of counties.

4.2 Measures of regional economic performance

To measure regional economic performance, we rely on several indicators. Our main independent variable of interest is a change in relative income position between 1925 and 2015. It relies on the Rank Mobility Index (Fotopoulos & Storey 2017), which captures a difference in the rank position of a region in the national League Table between two time periods, corrected by the number of regions. Formally, it can be expressed as follows:

$$Income\ rank\ mobility\ index_r = \frac{Rank_{2015,r} - Rank_{1925,r}}{n-1} \quad (1)$$

where r denotes a region and n the total number of all regions. We adjust this measure by considering only the relative position of a region that is determined by using the per capita income in 1925 as our baseline. In other words, we only account for a variance in changes in income position that is not due to actual income in 1925.[3]

In order to measure more recent per capita income, including measures for all time periods after 1992, we calculate the disposable income of private households divided by the regional population.

4.3 Model

We account for the spatial distribution of populist votes in Germany by using the following model:

$$vote_r = \alpha + \beta \overline{ECON}_r + \gamma \overline{HIST}_r + \delta \bar{X}_r + \theta_r + \epsilon_r \quad (2)$$

[2] The year 1925 can be regarded as relatively stable in economic terms. The unemployment rate for Germany as a whole in 1925 was estimated to be around 2.8 percent, which is very low compared to the rate in the late 1920s and early 1930s (Corbett, 1991). At this time, a part of Germany, the Saarland, was administered by the League of Nations. As a result, we do not have any census statistics for the year 1925 for this region and have to exclude the planning region that corresponds to the State of Saarland.

[3] To obtain the adjusted measure we regress the actual change in the ranking on the historical level of income. The residual from this regression is our adjusted measure for long-term income change (decline).

where regions are indexed by r. The regional level of analysis is counties. The model includes three main vectors of variables of interest: $\overline{ECON}_r$ represents the main vector of interest and captures current income and long-term income change, $\overline{HIST}_r$ is a set of historical conditions (for details, see Section 4.4).

We also introduce a vector of current regional conditions, $\bar{X}_r$. Some of these factors are likely to be an outcome of long-term decline. We identify these factors based on the literature on the determinants of populism (for details, see Section 4.5).

In order to control for unobserved characteristics across neighboring counties, we include θ_r fixed effects for planning regions.[4] The stochastic error term ϵ_r denotes all remaining variations in the outcome. We also include robust standard errors in all specifications.

4.4 Historical control variables

The vector $\overline{HIST}_r$ includes the following historical control variables:

- *Share of extreme right-wing parties votes over all votes in 1928 as a percentage.*[5] This variable controls for a long-term regional persistence in ideological preferences (e.g., Cantoni et al. 2019; Hoerner et al 2019). We expect regions with higher shares of right-wing votes in the past to have higher shares of AfD votes today.

- *Population density in 1925.* This variable captures a variety of initial regional conditions that may affect the long-term development of places other than the regional income situation before World War II, such as agglomeration economies and diseconomies, as well as regional human capital.

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[4] Planning regions represent functionally integrated spatial units comprising several districts (NUTS 3 regions). They are a common spatial category for regional analysis and the assessment of regional infrastructures, and are similar to labor-market units in the United States.

[5] We rely on the year 1928, because the Nazi party's (NSDAP) rhetoric was most radical in this year and better captures its extreme-right wing agenda as compared to later elections where the NSDAP pretended to have a more moderate agenda to attract more voters, when in fact their real agenda was just as extreme.

4.5 Current regional conditions and populist voting

The vector $\bar{X}_r$ reflects potential outcomes of long-term economic decline. If the significance of our measure for long-term decline vanishes, it might be because its long-term effect is working through these conditions. Hence, we consider:

- *Current income per capita.* This is our standard variable for regional income (Rodríguez-Pose 2018; Van Hauwaert et al. 2019; Becker et al. 2017; bin Zaid & Joshi 2018). It is likely to be an outcome of past economic development and decline. We expect current income levels to have a negative relationship with populist party support, but the measure should have less of an impact than our measure for long-term decline.

- *Share of people with higher education.* The literature suggests that a higher share of less educated people is associated with a higher share of populist votes (Becker et al. 2017; bin Zaid & Joshi 2018). Hence, we expect that a higher share of highly educated people will result in a lower share of populist votes. The share of highly educated people is also an important part of the regional knowledge base.

- *Unemployment rate.* This variable is a symptom of long-term economic decline, and can be a powerful trigger of support for populist parties (Becker et al. 2017; bin Zaid & Joshi 2018). We expect that regions with higher unemployment rates will have a higher share of votes for the AfD.

- *Share of employees in manufacturing industries.* This variable captures local economic structures. Regions with a high share of manufacturing employment are more likely to experience the effects of globalization and automatization. These areas tend to also experience (long-term) economic decline, and are often a breeding ground for populist rhetoric (Essletzbichler et al 2018; Becker et al. 2017; bin Zaid & Joshi 2018). Hence, we expect regions with a high share of manufacturing employment to have a high share of votes in support of populist parties.

In addition to factors that capture local economic structures and realities, we also consider socio-demographic variables to capture potential symptoms of long-term economic decline.

- *Share of people over 65 years old*. A high share of older people can be symptomatic of long-term economic decline, and we expect a positive correlation between the share of people over 65, and the share of AfD votes.

- *Declining population.* This variable is another factor that can be indicative of long-term economic decline. Hence, we expect this variable to have a positive correlation with the share of AfD votes.

Finally, we include a set of variables that describe the current status of a region that are not necessarily symptomatic of long-term economic decline.

- *Peripheral regions.* We define a region's relative "peripheralness" by using the average car travel time from a region's geographic center to the nearest speed train (IC/ICE) station. The longer this travel time the more peripheral the region. Because this may fuel frustration and feed into populist voting, we expect that the most peripheral regions will have the highest shares of populist votes.

- *Share of foreign-born population.* A larger share of foreign-born individuals living in a particular region tends to feed xenophobia in the local population, and this tendency encourages the rise of populism (e.g., Becker & Fetzer 2017; Dinas et al 2019). However, if it is true that foreigners tend to settle in places that exhibit special cultural traits, like open-mindedness and tolerance, then their presence may not create xenophobic feelings in the local population. Therefore, the two tendency may cancel each other out, leaving us with no clear expectation for this variable.

- *Religion.* Empirical literature finds that the ethical principles of Protestantism fueled the acceptance of Hitler's ideology and supported the rise of the Nazi movement in the 1920s (e.g., Falter 1991, Spenkuch & Tillmann 2018). We already capture this tendency via the share of votes cast for the NSDAP in the 1920s (see section 4.4). However, to err on the side of caution, we also control for the current share of Protestants across regions, but have no firm expectation regarding the sign of the coefficient estimate.[6]

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[6] The link between religion and populism is twofold. On the one hand, populists tend to mobilize religious conservatives by instrumentalizing a Christian identity in their anti-Islamic rhetoric

- *Social capital.* This variable measures the relative probability of a Facebook friendship link between two given Facebook users from one region in 2016 (for more details, see Bailey et al. 2018). We have no firm expectation regarding this variable since, on the one hand, social connectedness and stronger social integration fosters democratic virtues, cooperation, and tolerance, and thus hinders the spread of populism (e.g., Putnam 2000; Boeri et al. 2018; Giuliano and Wacziarg 2020 etc.), while there is also evidence that strong social capital can fuel populism (Satyanath et al. 2017; Rodríguez-Pose et al. 2020).

Table A1 in the Appendix provides a definition for each variable, as well as the expected sign. Table A2 in the Appendix provides descriptive statistics for all variables used in the analysis.

5. Empirical analysis

Before discussing of the overall results of our empirical analyses, Table A3 in the Appendix presents a quick look at some simple correlations. We see that whereas the AfD vote share is not correlated with the historical income level, it is highly correlated with the income rank mobility index. This is in line with our expectation that it is not places that were once poor that "take revenge" by casting votes for populist parties, but that revenge seems to be the choice of once-rich places that are in the midst of experiencing a long-term decline. Another insight is that current regional income levels show little correlation with historical regional income. This implies that there is little income persistence in Germany, but rather that there has been a significant change in the relative economic wealth of many regions. This finding implies that current regional income distribution is the result of a long-run process impacted by Germany's dramatic history of turmoil that shaped the collective memory of places over the last century.

Table 1 presents our baseline estimates. In all models, the dependent variable is the share of votes for the AfD. Our main variable of interest is long-term economic decline. As outlined above, we believe that this measure has more explanatory power than the difference between the historical and current income

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(DeHanas & Shterin 2018; Marzouki et al. 2016). On the other hand, Christian religiosity is claimed to "immunize" a population against right-wing populism (Arzheimer & Carter 2009; Immerzeel et al. 2013; Siegers & Jedinger 2020).

levels. We test this conjecture by running models with different sets of income measures.

We also include historical controls in the baseline model. These are population density in 1925 as a catch-all variable for regional economic conditions, and the vote share for right-wing parties in the 1928 elections to capture the potential effect of a historical preference for right-wing parties. We also include dummy variables for the planning region in which a county is located, to control for regional labor market effects.

Table 1: Main results

	(1)	(2)	(3)	(4)	(5)	(6)
Income per capita, 2015	-0.003***	-0.001	-0.001			
	(0.001)	(0.001)	(0.001)			
Income rank mobility index (Adjusted)		-0.022**	-0.022**	-0.028***	-0.029***	-0.032***
		(0.010)	(0.010)	(0.006)	(0.006)	(0.006)
Income per capita, 1925			-0.048*	-0.051*		
			(0.027)	(0.027)		
Population density, 1925 (log)	-0.006***	-0.007***	-0.006***	-0.006***	-0.007***	-0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Share for extreme right-wing parties votes over all votes, 1928	-0.044***	-0.043***	-0.040**	-0.042**	-0.045***	
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	
Planning region dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.180***	0.148***	0.146***	0.130***	0.128***	0.116***
	(0.020)	(0.023)	(0.022)	(0.011)	(0.011)	(0.011)
Number of observations	394	394	394	394	394	394
R-squared	0.905	0.906	0.907	0.907	0.906	0.904

Notes: The dependent variable is the share of votes for the populist AfD party in the Federal elections of September, 2017. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

In Model 1, we include the current income level, but do not yet consider long-term decline. The current income level is negatively related to AfD voting. In Model 2, we introduce our measure for long-term regional decline and find a significantly negative effect. The current income level is insignificant in Model 2. Model 3 contains our measure for long-term regional decline along with the initial historical income level. This model's results reveal that the historical income level is only weakly significant, while the effect of long-term decline is highly significant; the current income level remains insignificant here. The more a region moved down in the regional income ranking the higher the regional vote share of

the AfD, regardless of the income level (see also Model 4). Note that we only capture the decline that is unrelated to the historical income level. The results are robust when omitting the historical income level (Model 5).

The coefficient for historical population density has a significantly negative value in all models. Interestingly, the share of right-wing votes in the year 1928 is negatively related to the current share of AfD votes. These results are in line with Hoerner et al. (2019), but contradict Cantoni et al. (2019). Most important, the effect of long-term decline is robust when removing historical right-wing voting patterns from the model (Model 6, Table 1).

These initial results indicate that places that were economically wealthy in the mid-1920s, and became poorer within the last century are more likely to vote for populist parties. One potential channel behind this relationship is the presence of a place-based collective memory. People may be aware about their relative impoverishment when compared to the previous prosperity enjoyed by those who lived in the same area, and cast their votes in favor of populists. The results from our baseline estimate call for an investigation of the channels behind the strong link between long-term decline and populist voting. While we cannot test the role of collective memory directly, we can at least consider symptoms of current economic despair that eventually mediate the relationship between long-term decline and populist voting.

In the models presented in Table 2, we individually include several symptoms of the current economic regional conditions. The underlying idea is that if our measure for long-term decline loses significance, this may indicate a more specific reason for AfD voting. In these models, we consider a long-term population change (decline) between 1925 and 2015, the share of population above the age of 65 years, distance to a high-speed train station, the share of manufacturing employment, local unemployment, and the share of high-skilled employees. These factors are symptoms of the economic state of a region. Additionally, we control for the current share of immigrants.

Table 2: The mechanism behind income rank mobility and populist voting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Income per capita, 1925	-0.048*	-0.057**	-0.033	-0.038	-0.044*	-0.014	-0.027	-0.045*	-0.041	-0.043	-0.016
	(0.027)	(0.029)	(0.027)	(0.028)	(0.025)	(0.022)	(0.026)	(0.027)	(0.028)	(0.028)	(0.023)
Income rank mobility index (adjusted)	-0.028***	-0.026***	-0.031***	-0.028***	-0.029***	-0.005	-0.006	-0.028***	-0.026***	-0.030***	0.004
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)
Population density, 1925 (log)	-0.006***	-0.007***	-0.005***	-0.003*	-0.000	0.007***	-0.012***	-0.005***	-0.005***	-0.002	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Share for extreme right-wing parties votes over all votes, 1928	-0.039**	-0.043***	-0.054***	-0.039**	-0.030*	-0.019	-0.051***	-0.072***	-0.044***	-0.054***	-0.038***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.013)	(0.015)	(0.019)	(0.017)	(0.018)	(0.013)
Population change, 1925-2015	-0.002									-0.002	0.002**
	(0.001)									(0.001)	(0.001)
Population share of migrants, 2015		0.046								0.128**	0.027
		(0.054)								(0.052)	(0.049)
Population share >65 years old			0.288***							0.301***	-0.017
			(0.088)							(0.084)	(0.063)
Average car travel time to the nearest IC/ICE station in minutes				0.000**						0.000	0.000
				(0.000)						(0.000)	(0.000)
Manufacturing share					0.001***					0.001***	0.000***
					(0.000)					(0.000)	(0.000)
Share of employees with tertiary education over all employees						-0.003***					-0.003***
						(0.000)					(0.000)
Share of unemployed in the labor force in %, 2017							0.007***				0.004***
							(0.001)				(0.001)
Share of protestant population								0.042***		0.018	0.022**
								(0.015)		(0.013)	(0.011)
Social Connectedness Index									0.000	-0.000	-0.000**
									(0.000)	(0.000)	(0.000)
Planning region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.134***	0.134***	0.063***	0.109***	0.061***	0.085***	0.117***	0.110***	0.122***	-0.001	0.057***
	(0.012)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.010)	(0.013)	(0.011)	(0.024)	(0.018)
R-squared	0.908	0.907	0.913	0.909	0.920	0.944	0.918	0.909	0.908	0.929	0.951

Notes: The dependent variable is the share of votes for the populist AFD party in the Federal elections of September, 2017. The number of observations is 394 in all models. Robust standard errors in parentheses. ***: $p<0.01$; **: $p<0.05$; *: $p<0.1$.

We find that the share of immigrants and long-term population change are not related to support for populists' parties. Whereas a higher share of elderly individuals, greater distance to a high-speed train station, and a higher share of manufacturing employment are positively linked to populist vote shares. Remarkably, our measure for long-term economic decline remains rather stable and unaffected when these variables are included. Hence, these factors are unlikely to be channels through which long-term decline affects current voting behavior.

The picture is somewhat different for levels of unemployment and a skilled work force. Unemployment is significantly and positively related to the rise of right-wing populist voting behavior, whereas a higher share of an educated labor force is negatively associated with our outcome variable. Introducing one of these factors into our models drives the measure for long-term decline to insignificance. Hence, both factors are likely channels through which long-term decline affects current populist voting. Results from auxiliary regressions, where both factors are regressed on long-term decline, confirm that the latter is positively and significantly related to the skill level of the workforce and the level of unemployment (see Table A3 in the Appendix). Since the skill level of the local workers is an important part of the knowledge base, our results indicate that regional knowledge represents an important channel through which the historical decline in wealth explains voting behavior in German regions.

The result on education levels meets our expectations and is in line with previous research. Hence, this finding also provides support for the idea that long-term economic decline fuels a cultural backlash, whereas highly educated young professionals are generally more cosmopolitan. It could also be the case that well-educated people feel less threatened by immigration or globalization, because they are attracted to urban centers that provide more employment opportunities. The lack of significance associated with our foreign-born population variable is surprising, especially when one considers the unprecedented refugee situation in Germany, and the xenophobic rhetoric of the AfD. This result is, however, in line with other empirical research on populist voting trends that finds little support for the supposition that a regional population's general discontent may be driven by high levels of immigration (Becker et al. 2017, Dijkstra et al. 2020). Our results

with respect to manufacturing share are also in line with previous empirical findings (Essletzbichler et al. 2018; Dippel et al. 2015). Also, the lack of explanatory power of social capital for right-wing voting trends corresponds to some earlier findings in the literature (Rydgren 2009; Rydgren 2011). Regions with higher Protestant shares are positively associated with higher vote shares for AfD, but only when calculated in a stepwise fashion, and when included with local unemployment and the level of workforce education. Hence, there is no robust pattern that suggests that a high share of Protestants drives populist voting trends.[7]

Table 3: Main analysis: Accounting for East-specific differences

	(1)	(2)	(3)	(4)	(5)	(6)
Income per capita, 2015	-0.003***	-0.001	-0.001			
	(0.001)	(0.001)	(0.001)			
Income per capita, 2015 X East	0.007	0.004	0.008			
	(0.005)	(0.008)	(0.008)			
Income rank mobility index (adjusted)		-0.023**	-0.022**	-0.030***	-0.032***	-0.034***
		(0.010)	(0.009)	(0.006)	(0.007)	(0.006)
Income rank mobility index (adjusted) X East		0.026	-0.001	0.058	0.055	0.059
		(0.073)	(0.070)	(0.044)	(0.043)	(0.044)
Income per capita, 1925			-0.038	-0.040		
			(0.025)	(0.025)		
Income per capita, 1925 X East			-0.143	-0.113		
			(0.148)	(0.136)		
Controls Table 2	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.183***	0.149***	0.146***	0.126***	0.126***	0.114***
	(0.020)	(0.023)	(0.022)	(0.010)	(0.011)	(0.010)
Number of observations	394	394	394	394	394	394
R-squared	0.906	0.907	0.909	0.909	0.907	0.905

Notes: The dependent variable is the share of votes for the populist AfD party in the Federal elections of September, 2017. Robust standard errors in parentheses. ***: $p<0.01$; **: $p<0.05$; *: $p<0.1$. East German dummy perfectly captured by planning region FE. Controls as in Table 2.

As a robustness check, we want to test whether the relationship between long-term decline and AfD support is particularly pronounced in Eastern German

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[7] In several alternative specifications, we included either the share of Catholics or the share of religious population over total population. Both variables are negatively related to AfD vote shares. For a differentiated analysis of the Catholicism-AfD link see Haffert (2020). The negative link between the share of religious population and the radical vote is weakly significant, and is in line with the established "vaccine effect" of religiosity (e.g., Siegers & Jedinger 2020). For a detailed discussion of the mechanisms behind this effect see e.g., Arzheimer & Carter (2009).

regions where long-term decline was mainly caused by external shocks that the local population was unable to control (four decades of socialism and radical transformation). The results presented in Table 3 reveal that there is no significant effect when interacting long-term economic decline with an indicator for location in an Eastern German region. Hence, the effect of long-term decline on populist voting trends does not differ between Eastern and Western German regions. We conclude that the higher share of votes for the AfD party in Eastern regions is caused by the pronounced difference in the economic status of these regions when compared to their pre-war levels.

Finally, we want to test whether short-term changes of income levels play a more important role than the long-term changes. To this end, we begin with data from 1992, the first year after German reunification with regional data for both Eastern and Western German regions. Since specific data on income are not available for this period, we use GDP per capita as a proxy for income. Model 1 in Table 4 shows that our proxy regional income level in 1992 is unrelated to AfD

Table 4: Populist voting and short-term economic development

	(1)	(2)	(3)	(4)	(5)	(6)
Income rank mobility index (adjusted)	-0.029***	-0.030***	-0.028***	-0.030***	-0.028***	-0.029***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
GDP per capita, 1992	-0.182	-0.241				
	(0.204)	(0.195)				
GDP per capita growth, 1992-2016		0.010**				
		(0.004)				
GDP per capita, 2000			-0.244	-0.284**		
			(0.156)	(0.135)		
GDP per capita growth, 2000-2016				0.023***		
				(0.007)		
GDP per capita, 2009					-0.184	-0.221*
					(0.127)	(0.114)
GDP per capita growth, 2009-2016						0.021**
						(0.010)
Controls Table 2	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.124***	0.100***	0.121***	0.081***	0.122***	0.091***
	(0.013)	(0.016)	(0.012)	(0.015)	(0.012)	(0.019)
Number of observations	394	394	394	394	394	394
R-squared	0.906	0.908	0.907	0.910	0.906	0.907

Notes: The dependent variable is the share of votes for the populist AfD party in the Federal elections of September, 2017. Robust standard errors in parentheses. ***: $p<0.01$; **: $p<0.05$; *: $p<0.1$. East German dummy perfectly captured by planning region FE. Controls as in Table 2.

votes. Interestingly, growth of GDP per capita between 1992 and 2016 is actually positively associated with the share of AfD votes (Model 2). Most important, neither the GDP per capita level in 1992 nor its subsequent growth affect the significance and coefficient estimates for our main variable of interest. The pattern is similar when controlling for the GDP per capita level in 2000, and its growth until 2016 (Models 3 and 4), and when considering the GDP per capita level in 2009 and its growth until 2016 (Models 5 and 6). Hence, our results indicate that short-term economic decline since the early 1990s is not a driver behind our baseline results.

6. Discussion and conclusions

Our analysis of German regions shows that voters in regions with low-income levels have pronounced preferences for right-wing populist parties. However, we show that this pattern vanishes once we specifically consider a long-term economic decline as compared to other regions. This is consistent with Andres Rodríguez-Pose's (2020) general supposition that it may be a feeling of being left behind that fuels voting for right-wing populist parties and politicians.

Our analysis may also explain the stark difference in voting behavior between regions in the former GDR and regions in what was West Germany. A significantly higher share of right-wing populist votes is cast in former GDR regions. Although the regions in the Eastern part of Germany experienced pronounced growth after the dismantling of the socialist regime and the subsequent transformation to a market economy, they still lag behind their West German counterparts, with only weak tendencies of convergence. That we find a negative relationship between economic growth and populist voting in East German regions poses the question of the relevant time horizon for assessing economic decline. Is the sense of feeling being left behind based on a perception of how things were in Eastern German regions compared to Western German regions time before WWII?

Our results are robust when controlling for regional characteristics, namely regional population density, the share of immigrants, intraregional social connectedness, the share of Protestants, access to high-speed trains, the share of individuals 65 years of age or older, and the historical vote share for extreme

right-wing parties. Interestingly, we find that the effect of long-term economic decline vanishes when we consider the share of the population with a tertiary degree. This share represents an important part of the regional knowledge base. Hence, this pattern suggests that the regional knowledge represents an important channel through which the historical decline in wealth explains voting behavior in German regions.

Given that high levels of approval for right-wing populist parties constitute a threat to the established political system, a 'revenge of declining regions' can be regarded a call for place-based policies. Obviously, policy measures that support the development of such regions can be an important antidote. Such policies do, however, take considerable periods of time before the benefits become visible, and there is no clear indication that increasing the resources transferred to lagging regions is the most effective solution.

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Appendix

Table A1: Definition of variables

Variable	Definition	Expected sign
Income per capita, 1925	Income per inhabitant, in 1000 Reichsmarks[a]	
Income per capita, 2015	Disposable income of private households per inhabitant, in mln Euro[b]	-
Income per capita, 2015 (adjusted)	Variance in the income per capita in 2015 that is not due to income per capita in 1925	-
Income rank mobility index (adjusted)	Variance in changes in regional income position that is not due to income per capita in 1925	-
Population density 1925 (log)	Inhabitants per square km in 1925	-
Share of population with tertiary degree (%)	Share of employees with tertiary education over all employees	-
Share for extreme right-wing parties votes over all votes in 1928 (%)	Share for extreme right-wing parties votes over all votes in 1928 (%)	+
Unemployment rate 2017 (%)	Share of unemployed in the labor force in %, 1998	+
Change of number of unemployed (%)	Development of the number of unemployed in %, 1998-2017	+
Share of foreign-born population, 2015	Share of foreign-born population over total population	+
Population change (%)	Change of population between 1925 and 2015	-
Share of manufacturing employment 2017	Share of employees in manufacturing occupations over all employees, in %[c].	+
Peripheral location	Average car travel time to the nearest IC/ICE station in minutes[d]	+
Religion	Share of protestants among total population in 2011[e]	+
Social capital	A relative probability of a Facebook friendship link between two given Facebook uses from one region[f].	

Note: [a]Statistics of the German Empire, vol. 348, [b]National Accounts of the Federal States, 2017, [c]Employment statistics of the Federal Employment Agency, [d]Federal Office for Building and Regional Planning, [e]2011 German Census, [f]Bailey et al. (2018).

Table A2:   Descriptive statistics

	Mean	Standard deviation	Minimum	Maximum
AfD vote share	0.133	0.053	0.049	0.35
Income per capita, 1925, in 1000 Reichsmarks	0.188	0.06	0.049	0.385
Income per capita, 2015, in Mln EUR	21.163	2.467	15.846	34.287
Income rank mobility index (adjusted)	0	0.305	-0.604	0.758
Population density, 1925	322.605	509.144	32.715	3020.887
Share for extreme right-wing parties votes over all votes, 1928	0.151	0.107	0.026	0.766
Population change 1925-2015	1.889	1.009	0.555	9.548
Population share of migrants 2015	0.089	0.049	0.019	0.336
Population share >65 years old 2015	0.216	0.025	0.155	0.299
Average car travel time to the nearest IC/ICE station in minutes	21.997	15.422	0	79
Percentage of employees with tertiary education over all employees, 2016	12.111	5.742	5.1	40
Percentage of unemployed in the labor force, 2017	5.338	2.414	1.5	14
Manufacturing employment in %, 2016	30.281	7.133	12.6	55
Protestant share	0.317	0.175	0.045	0.759
Social connectedness index	7610000	5740000	234000	30500000

Table A3: Correlation table

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	AfD vote share, 2017	1.000														
2	Income per capita, 1925	0.002	1.000													
3	Income per capita, 2015	-0.421***	0.121**	1.000												
4	Income rank mobility index (adjusted)	-0.459***	0.000	0.904***	1.000											
5	Log of population density, 1925	-0.049	0.266***	-0.148***	-0.161***	1.000										
6	Share for extreme right-wing parties votes over all votes, 1928	0.017	0.080	-0.125**	-0.157***	-0.085*	1.000									
7	Population change 1925-2015	-0.379***	0.161***	0.510***	0.447***	-0.106**	-0.117**	1.000								
8	Population share of foreign-born 2015	-0.412***	0.222***	0.385***	0.376***	0.538***	-0.276***	0.463***	1.000							
9	Population share >65 years old	0.522***	0.016	-0.355***	-0.436***	-0.066	0.245***	-0.415***	-0.540***	1.000						
10	Average car travel time to the nearest IC/ICE station in minutes	0.253***	-0.255***	-0.078	-0.069	-0.502***	0.072	-0.269***	-0.480***	0.323***	1.000					
11	Share of employees with tertiary education over all employees	-0.147***	0.402***	0.219***	0.133***	0.536***	-0.049	0.346***	0.472***	-0.303***	-0.512***	1.000				
12	Share of unemployed in the labor force in %, 2017	0.207***	0.137***	-0.628***	-0.672***	0.535***	0.114**	-0.312***	0.018	0.404***	-0.207***	0.055	1.000			
13	Manufacturing employment, 2017	0.278***	-0.300***	0.049	0.130***	-0.492***	-0.066	-0.121**	-0.340***	0.076	0.435***	-0.570***	-0.400***	1.000		
14	Religion	-0.33***	0.091*	0.026	0.028	-0.078	0.377***	-0.014	-0.055	0.126**	0.038	-0.17***	0.076	-0.027	1.000	
15	Social capital	0.217***	-0.43***	-0.176***	-0.138***	-0.363***	0.091*	-0.312***	-0.447***	0.32***	0.465***	-0.513***	-0.165***	0.426***	0.019***	1.000

Notes: ***: $p<0.01$; **: $p<0.05$; *: $p<0.1$.

Table A4: Auxiliary regressions: The role of historical income and income rank mobility for current regional conditions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Population change 1925-2015	Population share of migrants 2015	Population share >65 years old	Travel time to the nearest IC/ICE station	Share of employees with tertiary education	Manufacturing share	Share of unemployed	Share of protestant population	FB Social Connectedness Index
Income per capita, 1925	1.064	0.137***	-0.060**	-39.480***	11.998*	-5.041	-3.515**	-0.133	-2.111e+07***
	(1.442)	(0.051)	(0.027)	(13.659)	(6.769)	(7.643)	(1.712)	(0.111)	(5892084.758)
Income rank mobility index (adjusted)	0.123	-0.030**	0.012**	0.115	7.329***	0.524	-3.260***	-0.003	-3655212.970***
	(0.415)	(0.013)	(0.006)	(3.439)	(1.458)	(1.900)	(0.388)	(0.024)	(1338944.797)
Population density 1925 (log)	-0.043	0.024***	-0.002	-7.952***	4.098***	-4.063***	0.945***	-0.019***	-1847452.590***
	(0.063)	(0.002)	(0.001)	(0.760)	(0.299)	(0.382)	(0.079)	(0.005)	(280,863.181)
Share for extreme right-wing parties votes over all votes, 1928	0.985	0.021	0.041**	-8.255	7.338**	-8.699*	1.392	0.726***	4236395.153
	(0.684)	(0.021)	(0.019)	(11.346)	(3.392)	(4.884)	(1.006)	(0.083)	(4407708.940)
Constant	1.575***	-0.093***	0.232***	63.383***	-14.745***	50.408***	1.857***	0.472***	16229666.702***
	(0.458)	(0.013)	(0.014)	(5.115)	(2.790)	(2.596)	(0.528)	(0.044)	(2395192.056)
Planning region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	394	394	394	394	394	394	394	394	394
R-squared	0.491	0.844	0.659	0.703	0.668	0.613	0.876	0.885	0.642

Notes: Robust standard errors in parentheses. ***: p<0.01; **: p<0.05; *: p<0.1.

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