

Greve, Maria; Fritsch, Michael; Wyrwich, Michael

**Article — Published Version**

## Long-term decline of regions and the rise of populism: The case of Germany

Journal of Regional Science

**Provided in Cooperation with:**

John Wiley & Sons

*Suggested Citation:* Greve, Maria; Fritsch, Michael; Wyrwich, Michael (2022) : Long-term decline of regions and the rise of populism: The case of Germany, Journal of Regional Science, ISSN 1467-9787, Wiley, Hoboken, NJ, Vol. 63, Iss. 2, pp. 409-445, <https://doi.org/10.1111/jors.12627>

This Version is available at:

<https://hdl.handle.net/10419/287787>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<http://creativecommons.org/licenses/by/4.0/>

# Long-term decline of regions and the rise of populism: The case of Germany

Maria Greve<sup>1,2</sup>  | Michael Fritsch<sup>2</sup>  | Michael Wyrwich<sup>2,3</sup> 

<sup>1</sup>Utrecht University, Utrecht, Netherlands

<sup>2</sup>Friedrich Schiller University, Jena, Germany

<sup>3</sup>University of Groningen, Groningen, The Netherlands

## Correspondence

Maria Greve, Utrecht University, Kriekenpitplein 21-22 Utrecht, 3584 EC, The Netherlands.

Email: [m.greve@uu.nl](mailto:m.greve@uu.nl); [maria.greve@uni-jena.de](mailto:maria.greve@uni-jena.de)

## Funding information

Bundesministerium für Bildung und Forschung

## Abstract

What characterizes regions where right-wing populist parties are relatively successful? A prominent hypothesis proposed in the emerging “geography of discontent” literature claims that places that are “left behind” constitute 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 high vote shares of populist parties are associated with the long-term decline of a region's relative welfare, which goes beyond a lifespan of people inhabiting such “left behind” places. Moreover, we are able to show that a place-based collective memory about past prosperity plays a crucial role in shaping present resentment. Finally, we find the education level of the regional population to be an important channel through which the collective memory about the past translates into populism support today.

## KEYWORDS

economic development, economic history, populism, territorial inequality

## 1 | INTRODUCTION

The observed rise of right-wing populist parties and politicians in many countries during the last decade has induced diverse attempts to explain these developments. One key finding of many studies analyzing recent right-wing populist movements is that their strength considerably varies across regions. For example, investigations of the

---

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2022 The Authors. *Journal of Regional Science* published by Wiley Periodicals LLC.

2016 Brexit referendum in the UK (e.g., Essletzbichler et al., 2018; Los et al., 2017) found huge regional variations in the voting patterns that led to Britain's exit from the EU. Pronounced regional differences in voters' preferences for right-wing populist parties are also found for elections in many other countries (e.g., Rodríguez-Posé, 2020; Rodríguez-Posé et al., 2021). These regional differences suggest that the support for right-wing populist parties has strong territorial foundations (e.g., Dijkstra et al., 2020; Rauhut, 2018). Investigating the regional pattern of votes for right-wing populist parties in a number of countries, Rodríguez-Posé (2018, 2020) found that many of the regions that support these movements have been in an economic decline for a long time. He concludes that this regional decline has engendered a feeling among the residents of being "left behind." In his view, voting for right-wing populist parties can be regarded as "the revenge of the places that don't matter" (Rodríguez-Posé, 2018, 2020).

This paper analyzes differences across regions in voters' preferences for the main German right-wing populist party, the *Alternative für Deutschland* (AfD). Germany is a particularly interesting case for such an analysis because of the country's separation into two states, the German Democratic Republic (GDR) in East Germany and the Federal Republic of Germany (FRG) in West Germany, for more than 40 years. 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 whether it is recent economic development or long-term historical developments that influence the voting behavior.

With this study, we contribute to the recent literature on the rise of populism in Germany. So far, many papers dealing with the rise of the AfD focus on the West–East divide (e.g., Weisskircher, 2020), a rural–urban divide (Förtner et al., 2020) or the role of secularization (Sieggers & Jedinger, 2020). There are also many papers dealing with individual determinants behind populist voting in the German context (e.g., Gerling & Kellermann, 2022; Goerres et al., 2018; Hansen & Olsen, 2019). A few papers analyze the historical determinants of the recent rise of the AfD, such as the long-run persistence of right-wing ideology (Cantoni et al., 2019), historical oppression of Catholics (Haffert, 2022), or spatial proximity to a concentration camp (Hoerner et al., 2019; Homola et al., 2020). There are also studies focusing on the link between globalization and the geography of discontent (Dippel et al., 2022; Schneider, 2020).<sup>1</sup>

None of the previous studies on the case of Germany considers the impact of the long-term regional income decline on voting behavior. We show that long-term economic decline has an important impact also when controlling for several alternative explanations. Our results indicate that a key factor for voting the right-wing populist AfD is not a region's economic performance in the short or medium-run, but the long-term relative economic decline over the course of the previous 90 years. Contrary to the wide-spread opinion (see, e.g., Weisskircher, 2020), we are able to show that the rise of populism in Germany is not a pure East German phenomenon related to the post-reunification development. Instead, it can be seen that for a profound understanding of the popularity of right-wing politicians, a truly long-term perspective is required. We argue that the channel behind our main findings is a collective memory of the historical success of regions. This idea is corroborated by our findings that the impact of long-term economic downturn on populist voting is stronger in declining regions with industrial heritage sites. There, past historical success is actually visible to the local population.

Our analysis delivers a valuable contribution to the literature on the "geography of discontent" or "geography of resentment" (McCann, 2020; Rodríguez-Posé, 2018, 2020) by adding two components that were largely disregarded so far. First, whereas a number of existing studies emphasize the importance of the relative income

<sup>1</sup>Schneider (2020) and Dippel et al. (2022) both center their arguments around the deindustrialization hypothesis and focus on time period after the 1980s. Other papers concentrate on specific regions, for instance, Thuringia (Schmalz et al., 2021) or Frankfurt am Main (Mullis, 2019). There are also a number of papers that deal with the rise of populism in Germany at a conceptual level (Decker, 2016) or describe the involvement of the AfD ideology (e.g., Arzheimer, 2019; Arzheimer & Berning, 2019).

decline, the time horizon under consideration remains usually limited to the developments of the last few decades, which have been characterized by such processes like globalization, structural change, and deindustrialization (see, e.g., Rodríguez-Posé et al., 2021). Such accounts do not go beyond “the economic and political systems that emerged from the post-World War II consensus” (Rodríguez-Posé, 2020, p. 2).<sup>2</sup> With our study, we provide insights to the role of long-term regional decline. We argue that the temporal dimension spanning over an intergenerational time horizon can matter even more for the rise of populism than the relatively recent developments of the past few decades. In the German context, this finding is particularly relevant since East German regions experienced a relative upsurge in their income levels during the past three decades. However, they are still lagging behind in the inner-German comparison and are found to be the most vigorously “revenging” places. Second, we add an important aspect because such a long-term time horizon makes it unlikely that the people, who vote for the populists nowadays, consciously carry own personal memories of a glorious past of now-disadvantaged places. Rather it seems to be the collective memory of places, still retaining visible signs of the pronounced well-being of earlier generations in their region. Earlier studies showed how the rhetorical mobilization of a particular historical episode can be exploited for the mobilization of sentiment (Mehic, 2022; Ochsner & Roesel, 2017). However, this present paper, to the best of our knowledge, is one of the first that highlights the generalizability of place-based collective memory in shaping the geography of discontent.

The article proceeds as follows. In Section 2, we review previous evidence on the factors that influence voting patterns for right-wing populist parties. Section 3 then describes the rise of right-wing populism in Germany and the 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, followed by discussion and conclusion in Section 6.

## 2 | RISE OF RIGHT-WING POPULISM: THE ROLE OF ECONOMIC DECLINE REVISITED

Although the details of populist movements show considerable differences across countries, they have at least three features in common (e.g., Brubaker, 2017; Guriev & Papaioannou, 2022; 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, they build on an antipluralistic notion leaving no room for group diversity. Third, a recent rise of far-right populism in Western economies also revealed that populists are nationalistic in the sense of regarding other countries and outside institutions as adversary or even hostile.<sup>3</sup> Moreover, and partly as a consequence of being against “foreign” influences, right-wing populist movements tend to be opposed to immigration.

There are two dominant approaches to explaining the recent rise of populism: the cultural and the economic ones (Noury & Roland, 2020). The “cultural backlash” perspective suggests that the rise of right-wing populism is primarily the result of a cultural counterrevolution. This is engendered by a fear that the progressive values held by younger generations as well as often better-educated and more cosmopolitan people will take over cultural and political institutions (e.g., Norris & Inglehart, 2019; Noury & Roland, 2020). Another argument (“globalization/modernization backlash”) focuses on economic insecurity and suggests 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 (Broz et al., 2021). These “globalization losers” are often less educated, less mobile, and exhibit a higher degree of regional identity, resulting in more localism and less cosmopolitanism than their more educated compatriots exhibit (Gordon, 2018; Lee et al., 2018).

<sup>2</sup>See, for example, the extensive literature review of the recent developments in the field by Guriev and Papaioannou (2022).

<sup>3</sup>In this paper, we focus on the discontent of the political right in the context of Europe and North America. Discontent in other places, like Latin America, might have different characteristics (see, e.g., Segovia et al., 2021).

Until the recent surge of populism in Western countries, populist research was a resort of historians and political scientists interested in intertemporal or individual voting preferences. Following the populism surge, economic geographers complemented the field arguing that voting preferences are also a subject of local factors. In other words, “geographical differences in the populist vote shares are then expected to be the result of the unequal geographical distribution of individuals with different characteristics (compositional effects) and differences in the spatial context in which those individuals reside (contextual effects)” (Essletzbichler & Forcher, 2022, p. 129). There is a growing amount of research showing that it is, particularly, economically lagging regions where the share of voters of right-wing populist parties or movements has sharply risen in recent years.<sup>4</sup> These results provoke an interesting question: Are voters in favor of such parties because the regions declined recently or because the regions lag behind for a long time?

In this respect, Rodríguez-Posé (2020) suggests that it is not the poor places per se but regions that faced a long-term economic decline that have a high share of votes for right-wing populist parties. The argument is that these places have an economic history of success but then declined in comparison to other regions and regard themselves as being in economic despair for some time. This argument implies that the local population is aware of the past success of the region relative to other regions. This idea is grounded in the finding that people are often aware about their economic situation relative to other areas (Rickardsson et al., 2021). On the basis of this juxtaposition, happiness and well-being of people living in certain places can either increase or decrease depending on the income development of the comparison group (Easterlin, 1974, 2001).

Thus, the mechanism leading to current voting behavior may be a place-based collective memory of past economic success, leadership, and economic well-being, compared with a less favorable current situation. This sense may be even stronger if the regional decline is not perceived as the result of internal weakness but as being mainly driven by external processes.

The concept of a place-based collective memory is based on the idea that places typically have their own meaning—a social construct that reflects collective histories, memories, and identities (e.g., David et al., 2005; Gieryn, 2000; Zukin, 2011). In this respect, a place is also the interplay of location, meaning, and material form (e.g., Gieryn, 2000). Jones et al. (2020, p. 212), for example, state that “[m]aterial 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.” However, it remains still largely unclear how such collective memory or awareness of the past influences socioeconomic and political preferences.<sup>5</sup>

Ochsner and Rösel (2017) demonstrate how a political party can activate historical memory for its campaign.<sup>6</sup> Fritsch et al. (2019) argue in the context of the former German city of Königsberg (nowadays: Kaliningrad), which is now part of Russia, that the contemporaneous Russian population is aware of physical symbols of past economic success, such as industrial museums, heritage sites, and factory ruins. The presence of such built remains may not only spur awareness of past economic success, but it may also trigger grievance about the current economic situation. Thereby, external forces get blamed for the destruction of visible internal strengths that existed in the past.

On the basis of these arguments, we hypothesize that an increase in voting for right-wing populist parties or movements is not explained by the current level of economic status or the developments of the more recent past but by the *relative* long-run economic decline of a region. Furthermore, we expect that this pattern is more pronounced when there are visible symbols of past economic success.

<sup>4</sup>See, for example, Rodríguez-Posé (2018, 2020), Van Hauwaert et al. (2019), Becker et al. (2017), bin Zaid and Joshi (2018), McCann (2020), and Broz et al. (2021).

<sup>5</sup>In the context of different phenomena, such as today's migration, regional identity plays an important role—see Kremer (2021) for consideration of the German context.

<sup>6</sup>Ochsner and Rösel (2017) analyze the effect of the campaign of a populist right-wing party in Austria against Turks and Muslims that referred to the Turkish sieges of Vienna in 1529 and 1683. The authors find that the campaign led to increased voting for the right-wing party, particularly, in those villages that were once pillaged by the Turks.

## 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 came from the German elite, including academics, lawyers, doctors, and managers, who opposed the delegation of political responsibilities to the European Union. At this early stage of development, the rhetoric of the AfD did not significantly differ from the conservative *Christlich-Soziale Union*. Its membership was quite center-oriented, and on a traditional left-right axis it was located to the left of the *Nationaldemokratische Partei Deutschlands* (e.g., Arzheimer, 2015). In 2015, there was a pronounced ideological shift of the AfD towards right-wing anti-immigration and anti-Islamic sentiments.<sup>7</sup> This ideological shift coincided with the refugee crisis in the summer of 2015, when over one million refugees arrived in Germany and triggered xenophobic sentiments among the German people. At that time, the party's rhetoric increasingly focused on chauvinistic, intolerant, and antimigration views (e.g., 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.

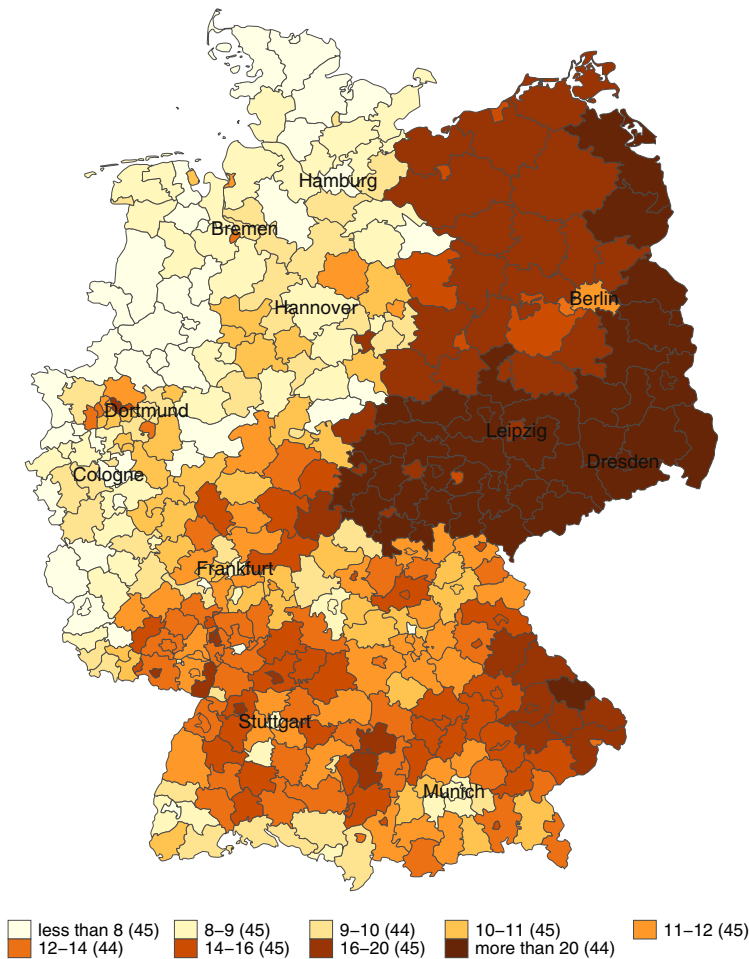
In the 2017 Federal elections, the AfD attained more than 12% of total votes nationwide, and was the first new party since the 1990s to gain seats in the German parliament, the *Bundestag* (Arzheimer & Berning, 2019). However, the success of the AfD did considerably vary across regions. The highest vote 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. However, the success of the AfD in the Federal elections in 2017 was not completely limited to East Germany. The party also received high shares of votes in a number of West German regions, particularly in some counties of Bavaria and Baden-Württemberg as well as 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 (Förtner et al., 2020), which represents the idea that voting patterns in Germany can be described as larger cities versus the rest of the country (Förtner et al., 2020; Rodden, 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 regions in East Germany.

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

The degree of long-term economic successes and declines of German regions is strongly shaped by the country's history. Although there are several historical realities that influence modern-day Germany, World War II is likely the most striking one. 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 influence on these events. East German regions became part of the socialist regime because of their geographical proximity to the Soviet Union, and the concrete borders of the area were negotiated among the victorious powers at 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, Mosely, 1950).

<sup>7</sup>The AfD campaign slogans and posters from the 2017 elections targeted anti-Islamic and anti-immigrant sentiments. This rhetoric was, as such, not present during 2013 elections. Arzheimer and Berning (2019) show how the party's modified rhetoric led to attraction of radical right voters by 2017. For a detailed account of the AfD evolution against the collective memory background, see Binder (2021).



**FIGURE 1** AfD election results for the 2017 national parliamentary elections to the Bundestag. Vote share is calculated as the number of second votes over the turnout. Numbers in parentheses in the legend indicate the number of regions in each category. The map comprises 401 counties in total.

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 countries, the State of Saxony, for example, was one of the richest regions in Europe (e.g., Sleifer, 2006; Tipton, 1976). After coming under Soviet rule, important firms located in Saxony until the end of WWII, such as the car manufacturer Audi, relocated to West Germany (Hefele, 1998). This trend coincided with a massive exodus of the local population, including a highly qualified workforce, which resulted in the largest economic dislocation in the 20th century during peace times (e.g., Burda & Hunt, 2001). Saxony's economic prospects suffered under socialism, which involved the dismantling of significant industrial facilities by the Soviets. The reunification of the two German states in 1990 initiated a radical transformation of the Eastern Soviet-style planned economy to a market system. This 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 right-wing populist voting trends in Saxony, which demonstrate dissatisfaction with current politics.

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

The Ruhr area in Western Germany 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. The two neighboring cities Düsseldorf (close to the Ruhr area) and Duisburg (within the Ruhr area) both had 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.

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 right-wing populist parties today. We also expect that the long-term decline of regions has more explanatory power with regard to voting for the AfD than the current regional income level.

## 4 | DATA AND METHOD

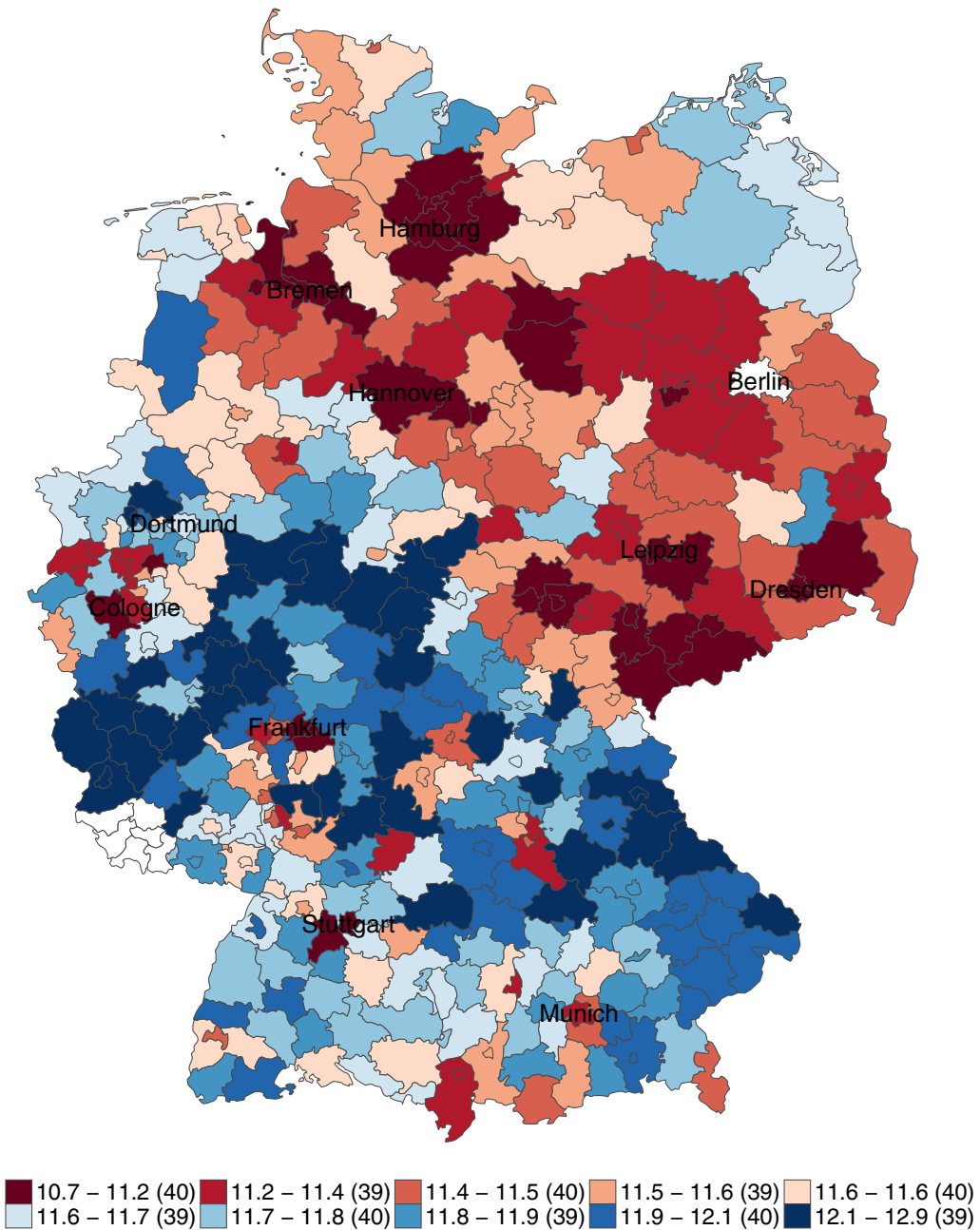
### 4.1 | Data on voting and regional income

The AfD vote shares are the result of the 2017 Federal elections for the German parliament, the *Bundestag*, that were retrieved from the official internet site of the Federal Returning Officer.<sup>8</sup> In our main analysis, we use data of the 2017 Federal elections. The main analysis is complemented by the alternative outcomes using data of the 2013 and 2021 Federal elections. We use data from the 2017 election in the main analysis because the right-wing populist agenda of the AfD had not yet been developed at the time of the previous Federal election in 2013 (Arzheimer & Berning, 2019; Jankowski et al., 2019). As expected, the correlation between the AfD vote share in 2013 and 2017 is way below the correlation between the years 2017 and 2021, as in the years after 2015 the party continuously evolved and established its populist agenda. Whereas the correlation between the past two election years, 2017 and 2021, amounts to over 0.96, it just lies at 0.62 for the years 2013 and 2017.

Historical income data stem from the year 1925, when statistics for taxable income were reported for the first time at a fine-grained regional level. This historical income data was digitalized and converted to present-day administrative borders using the Statistics of the German Empire (Statistisches Reichsamt, 1929). For present-day income measures, we

<sup>8</sup><https://www.bundeswahlleiter.de/en/index.html>.





**FIGURE 2** Income per capita change between 1925 and 2015. 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 parentheses 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.

use official statistics about the disposable income of private households published as part of the National Accounts of the Federal States (Statistische Ämter des Bundes und der Länder, 2018).<sup>9</sup>

The comparison with the 1925 data allows us to calculate the long-term economic change for the period including these historical shocks, which are now affecting the regional income distribution.<sup>10</sup> Devastating WWII, 40 years of a socialist regime in East Germany, and then the German reunification, which led to a shock transformation of the East German society to a market-based system, drastically shaped the regional income distribution, as we demonstrated earlier (see Section 3.2).

## 4.2 | Empirical model

We account for the geographic distribution of right-wing populist votes in Germany by using the following model:

$$\text{vote}_r = \alpha + \beta \overline{\text{ECON}}_r + \gamma \overline{\text{HIST}}_r + \delta \overline{\text{X}}_r + \epsilon_r, \quad (1)$$

where regions are indexed by  $r$  and stand for counties that represent the regional level of the analysis.  $\overline{\text{ECON}}_r$  includes the reversed income rank mobility index,  $\text{RIRM}_r$  (for an explanation, see Section 4.3) and the current income level.  $\overline{\text{HIST}}_r$  is a vector of historical control variables (for details, see Section 4.4).

We also introduce a vector of current regional conditions,  $\overline{\text{X}}_r$ , based on the literature on the determinants of right-wing populism (for details, see Section 4.5). Since these characteristics might be symptoms of long-term economic decline, we also run models without including the current regional conditions to rule out that our findings suffer from any such patterns. The stochastic error term  $\epsilon_r$  denotes all remaining variations in the outcome. All specifications include robust standard errors.

## 4.3 | Measure of regional economic decline

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.<sup>11</sup> It relies on the Rank Mobility Index (Fotopoulos & Storey, 2017), which captures the difference of a region's rank position in the national League Table between two points in time, divided by the number of regions. Formally, it can be expressed as

<sup>9</sup>To get an income per capita measure, we divide taxable income in 1925 by population and disposable income today by population. Taxable and disposable income differ in terms of their scope and meaning. Historical taxable income used in this study comprised the total amount of income from the same types of income that still exist today, among others agriculture and forestry, commercial enterprises, self-employment, capital assets, renting and leasing, as well as other recurring income and other benefit gains, less losses and special expenses. In other words, this type of income includes income from employment and wealth, and it is roughly but not exactly equivalent to today's measure of primary household income (for a detailed discussion of the development of the income statistics of Germany, see Ullmann, 2005). Current income measures refer to disposable income per capita. Disposable income is the income available for consumption and saving. It is derived from primary income by subtracting transfers and adding social and transfer benefits. To level out the definitional differences, we use the index based on ranks rather than income level (see Section 4.3 on the index construction). We assume that using a rank based on the historical primary income helps overcome the differences in income definitions. The rank can be used as a good proxy for the historical income and, thus, can be compared with today's disposable income. To test this assumption, we correlate today's primary income per capita (income of households from employment and assets) with the current disposable income on a country level. The Spearman's rank-order correlation coefficient for the year 2019 is above 0.94.

<sup>10</sup>An advantage of using data from the year 1925, instead of later pre-WWII periods, is the fact that the regional income distribution at this point was not yet affected by the Nazi regime and their specific economic policies. Moreover, it can be safely assumed that the visible industrialization sites, which were spurred by the Second Industrial Revolution, were already reflected in the local income levels. 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%, which is very low compared with the rates in the late 1920s and the early 1930s (Corbett, 1991). Since a part of what is Germany today, the Saarland, was at that time administered by the League of Nations, we do not have any census statistics for the year 1925 for this region and have to exclude it from our analysis.

<sup>11</sup>Wolf (2018) shows that whereas the average gross domestic product (GDP) per capita in East and West Germany was at the same level in 1925, East Germany slightly overtook West Germany by 1938. As Wolf (2018) argues, this was due to the above-average development of Saxony and Thuringia in this period. It makes us conclude that our estimates based on 1925 income data represent a lower bound estimate compared with the hypothetical index based on data from a later pre-WWII period, for example, 1938 data.

$$\text{Income rank mobility index}_r = \frac{\text{Rank}_{2015,r} - \text{Rank}_{1925,r}}{n - 1}, \quad (2)$$

where  $r$  denotes a region and  $n$  is the total number of regions. In our empirical assessment, we use the reversed income rank mobility (RIRM). That is, the higher the value, the more did a region decline relative to other regions. This transformation is supposed to make the interpretation of our findings more intuitive.

To obtain the adjusted measure we regress the actual change in the ranking on the historical level of income. Formally, we estimate the following equation:

$$RIRM_r = INC_{1925,r} + \epsilon_r, \quad (3)$$

where  $r$  stands for regions,  $INC_{1925,r}$  is expressed as the log-transformed taxable income per capita in 1925 and the error term  $\epsilon_r$  captures all remaining variations in the RIRM. The residual from this regression is our adjusted measure for long-term income change (decline). This adjustment is necessary to rule out that the initial income levels influence the income rank mobility index. Thus, the adjusted measure considers only the relative position of a region that is not determined by using the per capita income in 1925 as our baseline. In other words, we only account for a variance in changes in the ordinal income position that is not due to the actual income in 1925.

#### 4.4 | Historical control variables

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

- *Income per capita in 1925*: This variable controls for the initial income level.
- *Share of votes for extreme right-wing parties over all votes in 1928*:<sup>12</sup> This variable is supposed to account for a long-term regional persistence in ideological preferences of the population (e.g., Cantoni et al., 2019; Hoerner et al., 2019; Mehic, 2022). 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 is a proxy for agglomeration economies and diseconomies. As non-urban centers are deprived of agglomeration and urbanization advantages, they are usually considered a breeding ground for populism in the discontent literature (Kenny & Luca, 2021; Rickardsson, 2021; Rodrik, 2021). Therefore, we expect a positive sign for this variable.
- *Employment share in manufacturing and mining in 1925*: This variable captures whether regions have a tradition in manufacturing. Regions with such a tradition were more likely to experience a decline due to globalization and automation over the course of the 20th and the early 21st century, which may make them a breeding ground for populist rhetoric (see, e.g., Becker et al., 2017; bin Zaid & Joshi, 2018; Essletzbichler et al., 2018). Hence, we expect regions with a high share of manufacturing employment in 1925 to have a high share of votes in support of populist parties.

#### 4.5 | Control variables for current regional conditions

The vector  $\overline{X}_r$  reflects control variables for current regional conditions. We consider:

- *Current income per capita*: We expect current income levels to have a negative relationship with populist party support—in line with previous findings from the literature (Becker et al., 2017; bin Zaid & Joshi, 2018; Rodríguez-Posé,

<sup>12</sup>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 with 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.

2018; Van Hauwaert et al., 2019)—but the measure should have less of an impact than our measure for long-term decline.

- *Share of population with higher education*<sup>13</sup>: The literature suggests that a higher share of less-educated people is associated with a higher share of votes for right-wing populist parties (e.g., 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 votes for the AfD. The share of highly educated people is also an important part of the regional knowledge base (Fritsch & Wyrwich, 2018).
- *Unemployment rate*: This variable represents a symptom of long-term economic decline and can be a powerful trigger of support for populist parties (e.g., 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 population over 65 years old*: A high share of older people can be symptomatic of long-term economic decline due to the outmigration of the younger workforce. We expect a positive correlation between the share of population 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 is not necessarily symptomatic of long-term economic decline.

- *Accessibility*: A region's accessibility is measured as the average car travel time from its geographic center to the nearest speed train (IC/ICE) station. We expect that a longer travel time fuels frustration and feeds into right-wing populist voting.
- *Share of foreign-born population*: A larger share of foreign-born individuals living in a particular region may feed xenophobia in the local population and, hence, encourage the rise of populism (e.g., Becker et al., 2017; Dinas et al., 2019). However, foreigners tend to settle in places that are characterized by pre-existing migrant networks (Haug, 2008). If it is true that such places exhibit more multicultural interactions that are associated with special cultural traits, such as open-mindedness and tolerance, then the migrants' presence may not create xenophobic feelings in the local population (Allport, 1979; Hirschle & Kleiner, 2014). Therefore, the two effects 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). Therefore, we control for the population share of Protestants in 2011.<sup>14</sup>
- *Social capital*: This variable measures the relative probability of a Facebook friendship link between two given Facebook users from one region in 2016 (for details, see, Bailey et al., 2018). We have no firm expectation regarding this variable. On the one hand, social connectedness and stronger social integration foster democratic virtues, cooperation, and tolerance, and they may thus hinder the spread of populism (e.g., Boeri et al., 2018; Giuliano & Wacziarg, 2020; Putnam, 2000, etc.). On the other hand, there is also evidence that strong social capital can fuel populism (e.g., Rodríguez-Posé, 2020; Satyanath et al., 2017).

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.

<sup>13</sup>Please note that we treat this variable as an indicator for human capital. However, we acknowledge the fact that this rather economic interpretation is sometimes considered as too narrow in other fields, such as sociology, where the level of education can be interpreted in further ways (see, e.g., Hainmueller & Hopkins, 2014; Van der Waal & de Koster, 2015).

<sup>14</sup>The link between religion and populism is twofold. On the one hand, right-wing populists tend to mobilize religious conservatives by instrumentalizing a Christian identity in their anti-Islamic rhetoric (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).

## 5 | EMPIRICAL ANALYSIS

### 5.1 | Baseline estimates

Before we discuss the results of our empirical analysis, we first focus on some interesting descriptive patterns. Table A3 in the appendix presents the correlations of our empirical analyses. We see that, whereas the AfD vote share is not correlated with the historical income level, there is a high correlation with the reversed income rank mobility index. This is in line with our expectation that it is not places that were once poor that “take revenge” by fostering right-wing populist parties, but that revenge seems to be the choice of once-rich places that are 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 associated with an increase in AfD vote is no pronounced income persistence in Germany, but rather that there has been a significant change in the relative economic development of many regions. This is an indication for the impact of Germany's dramatic history of political turmoil on the current regional income distribution. Current regional income levels that emerged from this historical development are highly correlated with voting for the AfD as well.

Table 1 presents our baseline estimates. In all models, the dependent variable is the share of votes for the AfD in 2017. Our main explanatory variable of interest is the reversed income rank mobility. We include historical and current controls for regional conditions as outlined in Sections 4.4 and 4.5. All coefficients are additionally presented in standardized form with the mean value set to zero and a standard deviation of one (see values in square brackets). This additional coefficient presentation allows a better comparison between explanatory variables that have different scales, and it especially eases the RIRM interpretation.

We argued earlier that income rank mobility is more important for understanding populist voting than current income levels. To test this argument, we include the current income level in Model 1. We find that the current income level is not significantly related to AfD voting. Our measure for long-term regional decline, the RIRM index, on the other hand, does positively affect right-wing populist voting. This pattern is stable when removing current income levels (Model 2) and when adding income per capita in 1925 (Model 3). To rule out that our findings are driven by outliers, we log-transform all continuous variables (Model 4). The results are robust. In Models 1–4, we only considered historical controls. We add current controls in Models 5 and 6. The results for the long-term economic decline are robust regardless of log-transforming our variables. Moreover, the results show that the effect of our main explanatory variable is quite substantial in magnitude. An increase in one standard deviation of the RIRM, which equals 0.303, is associated with an increase in AfD vote shares of 2.31 percentage points (i.e., 0.436 of one standard deviation of the AfD vote share that is equal to 0.053 multiplied by 100—see, e.g., Model 3 of Table 1). This finding is in line with our expectation regarding the relative income changes and the resulting (un-)happiness (Easterlin, 1974, 2001), which then translates into political preferences, in our case, populism votes.

In Model 7, we introduce dummy variables for the 94 planning regions<sup>15</sup> (comparable to labor-market regions in the United States) assessed in our analysis. The idea is to capture unobserved regional factors. The RIRM becomes insignificant in this model. This comes as no surprise since planning regions capture almost the whole variance in the model, while the degrees of freedom in such a model are low. It is noteworthy that, despite controlling for planning-region fixed effects, the RIRM is still statistically significant with a positive sign when removing the control variable for the share of highly skilled employees (Model 8). In Model 7, the share of highly skilled employees is shown to be negatively related to right-wing populist voting and has an elasticity coefficient of  $-0.388$ . In other words, one standard

<sup>15</sup>Planning regions are somewhat larger than what is usually defined as labor-market areas. After WWI, 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. Moreover, since Berlin was subdivided into West and East Berlin during the German separation and this might be reflected in the income development, Berlin is also excluded from our sample. Thus, 94 planning regions are used for the analysis. Among the 94 planning regions, 21 regions are located in East Germany and 73 in West Germany.



TABLE 1 Main results

	(1)	(2)	(3)	Log (4)	Log (5)	(6)	Log (7)	Log (8)
Reversed income rank mobility index (RIRM)	0.055***	0.075***	0.076***	0.471***	0.237***	0.051***	-0.038	0.118**
	0.018	0.008	0.008	0.054	0.082	0.010	0.044	0.052
	[0.315]	[0.434]	[0.436]	[0.398]	[0.200]	[0.296]	[-0.032]	[0.099]
Income per capita, 2015	-0.003							
	0.002							
	[-0.132]							
Income per capita, 1925			0.024	-0.010	0.108**	0.058*	-0.048	-0.051
			0.037	0.047	0.048	0.034	0.032	0.039
			[0.027]	[-0.009]	[0.101]	[0.066]	[-0.045]	[-0.047]
Population density 1925 (log)	-0.023***	-0.023***	-0.024***	-0.140***	-0.068**	-0.014***	0.030	-0.080***
	0.003	0.003	0.003	0.021	0.027	0.004	0.021	0.021
	[-0.467]	[-0.467]	[-0.474]	[-0.413]	[-0.201]	[-0.286]	[0.088]	[-0.236]
Share for extreme right- wing parties votes over all votes, 1928	-0.017	-0.017	-0.018	-0.020	-0.009	0.013	-0.064***	-0.094***
	0.016	0.016	0.016	0.025	0.022	0.016	0.017	0.020
	[-0.034]	[-0.034]	[-0.037]	[-0.036]	[-0.017]	[0.026]	[-0.118]	[-0.173]
Employment share in manufacturing and mining, 1925	0.178***	0.178***	0.177***	0.257***	0.224***	0.125***	0.079***	0.116***
	0.025	0.025	0.025	0.042	0.039	0.023	0.022	0.025
	[0.469]	[0.467]	[0.465]	[0.418]	[0.364]	[0.328]	[0.129]	[0.189]
Share of population with higher education	No	No	No	No	0.094*	0.001	-0.388***	No
					0.051	0.000	0.036	
					[0.105]	[0.073]	[-0.434]	
Further controls for current economic situation	No	No	No	No	Yes	Yes	Yes	Yes
Planning-regions fixed effects	No	No	No	No	No	No	Yes	Yes
Constant	0.265***	0.206***	0.203***	-1.055***	-1.746**	0.080***	-1.671***	-2.757***
	0.047	0.012	0.013	0.183	0.682	0.030	0.339	0.428
R <sup>2</sup>	0.318	0.315	0.315	0.255	0.526	0.545	0.947	0.917

Note: The dependent variable is the share of votes for the populist AfD party in the Federal elections of September 2017. Robust standard errors below coefficient estimates. Standardized coefficients in square brackets. "Log" indicates that predictors are log-transformed. The number of observations (regions) is 394 in all models.

Abbreviations: AfD, Alternative für Deutschland; RIRM, reversed income rank mobility.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

deviation increase in the share of highly skilled employees, which is equal to 5.7%, is associated with the reduction of the AfD vote share by approximately 2.3 percentage points (beta coefficient  $-0.434$  multiplied by one standard deviation of the AfD vote share that is equal to 0.053 and by 100). Furthermore, auxiliary regressions show that the share of highly skilled employees is negatively related to long-term decline (see Table A5 in the appendix).

The findings from Models 7 and 8 suggest that a symptom of current economic despair—such as a low share of highly skilled employees—may be a channel through which relative economic decline affects voting behavior. The lower share of highly skilled employees in declining regions implies more potential for right-wing populist voting. Collective memory about past historical success might play an important role here. For example, it is safe to assume that human capital makes people less prone to simplistically drawing the conclusion that economic decline despite past success is caused by the impact of external threats. We will explore this mechanism in Section 5.2.

Next, we briefly mention the results for regional conditions. The income level in 1925 is not significantly related to right-wing populist voting today. 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 not significantly related to the current share of AfD votes unless we control for planning-region fixed effects. These results are in line with Hoerner et al. (2019) but contradict Cantoni et al. (2019). The historical employment share in manufacturing and mining has a significant positive impact on right-wing populist voting. In fact, an increase of the employment share in manufacturing in 1925 by 13.8% (amounting to one standard deviation) is associated with a more than 2.1 percentage points increase in the AfD vote share (an average of the respective beta coefficient amounting to 0.4 multiplied by one standard deviation of the AfD vote share that is equal to 0.053 and by 100).<sup>16</sup> This finding is in line with previous research (e.g., Dippel et al., 2022; Essletzbichler et al., 2018). Furthermore, we find that the share of immigrants is not related to far-right populist voting, which is in line with Becker et al. (2017) and Dijkstra et al. (2020).

The impact of the other control variables heavily depends on whether or not we consider planning-region fixed effects. This also holds for the share of highly skilled employees, which was insignificant when not considering planning-region fixed effects and is strongly negatively related when including these effects. Full results, including the estimates for current regional controls, are reported in Table A4 in the appendix.

To rule out that the results are affected by the specific election round, we also run regressions with the share of AfD votes in both 2013 and the most recent parliamentary elections in 2021 (see Table A7 in the appendix). As expected, the result for 2021 is extremely robust and the magnitude of the effect is even slightly higher than our baseline result for the 2017 elections. For instance, one standard deviation increase in the RIRM is associated with an increase of 2.85 percentage points in the AfD vote share (i.e. beta coefficient 0.438 multiplied by one standard deviation of the AfD vote share in 2021 that is 0.059 multiplied by 100 - see Panel B of Model 3 of Table A7). For the 2013 elections, there is no robust relationship between the RIRM and the vote share. This evidence goes in line with our explanation regarding the evolution of the AfD, namely that the party was not right-wing populist upon its establishment and, therefore, attracted protest voters only to a modest extent compared with the later elections.<sup>17</sup>

Finally, we briefly consider the case of East Germany and the role of short-term economic development. AfD support is particularly pronounced in East German regions, where the long-term decline was mainly caused by external shocks that the local population was unable to control (see Section 3.2). The context of German

<sup>16</sup>An average of the respective beta coefficient amounting to 0.4 is calculated as the average value of the upper (beta coefficient 0.469, Column 1) and lower bound (beta coefficient 0.328, Column 6) of estimated beta coefficients for employment share in manufacturing and mining in 1925 for models without planning regions fixed effects.

<sup>17</sup>We also run several other robustness tests using some alternative outcome variables for all electoral rounds. Olsen (2018) shows that the most prominent left-wing populist party (*Die Linke*) lost 430 thousand votes to the AfD in 2017 compared with 2013, predominantly in East Germany. These votes can be assumed to be from protest voters. Therefore, we use the vote share for *Die Linke* as an alternative outcome and indeed observe a significant and positive relationship with the RIRM already in 2013. Another alternative measure that we use is a voter's turnout. A relative income descent is associated with a smaller voter's turnout. This result is not surprising given that—as was shown earlier—the AfD success in 2017 was associated with voters who do not stay loyal towards one specific party from election to election. In other words, the AfD success was built upon the protest sentiments when the party drew its voters from the pool of earlier non-voters (Bieber et al., 2018; Hansen & Olsen, 2019). These results go in line with earlier literature postulating that radical right demand in Germany was without adequate supply before the emergence of the AfD (Arzheimer & Berning, 2019).

reunification leads to an interesting pattern with respect to the link between short-term economic development and populist voting. East German regions started to catch economically since the 1990s but did not yet reach the West German average even today. Some regions—for example, in Saxony—were above the German average before German separation. They also score relatively high on short-term economic development, while they score low on long-term economic development. This peculiar pattern leads to interesting findings when assessing economic development since the 1990s in our framework.

In Table 2, we use data from 1992 to calculate the income mobility after the reunification. The year 1992 is the first year after German reunification for which regional data for both Eastern and Western German regions is available. Since specific data on income are not available for this period, we use GDP per capita as a proxy for income and calculate the adjusted<sup>18</sup> reversed income mobility rank for the period 1992–2016. Models 1 and 3 show that long-term decline is still strongly and positively related to far-right populist voting, while people in regions that moved down in the ranking between 1992 and 2016 were less inclined to vote for the AfD. Most East German regions were moving up since 1992. Considering a dummy variable indicating a location in East Germany for obtaining the adjusted income rank mobility measure implies that recent income rank mobility has no effect at all on populist voting (Models 2 and 4). Hence, the counterintuitive negative link between short-term economic decline and right-wing populist voting is merely an artifact of the peculiarities of German separation and reunification. The German example shows very clearly that it is important to assume a long-term perspective and to consider the economic history of regions to understand populist voting patterns.

## 5.2 | Role of collective memory

Our initial results indicate that places that became relatively poorer over the last century are more likely to vote for right-wing populist parties. One potential mechanism behind this relationship is the presence of a place-based collective memory. People may be aware of their relative impoverishment—compared with the previous prosperity enjoyed by those who lived in the same area—and, thus, cast their votes in favor of populists.

We argued in Section 2 that symbols of past success may shape the awareness of previous prosperity. To test this empirically we utilize data on significant industrial heritage sites from *rottenplaces*—a leading professional magazine on industrial heritage.<sup>19</sup> We create dummy variables indicating whether the region hosts any significant industrial heritage. There are 38 regions that host at least one site. As Figure A1 in the appendix indicates, most regions that host at least one industrial heritage site are indeed located in one of the long-deprived regions of either East Germany or the Ruhr area in West Germany, which notoriously strike back at the populist ballot (see Section 3.2).

In a next step, we interact dummy indicators for the presence of significant industrial heritage sites with long-term economic decline. We expect that radical-right-populist voting is higher in regions facing long-term economic decline and hosting significant industrial heritage sites. Our argument is that these monuments of past economic success fuel populist voting in declining regions, as they promote collective memory of the past due to their visibility. At the same time, the fact that heritage sites exist in some declining regions but not in others is also informative about the local emphasis on regional identity and the awareness of local history, leading to initiatives to preserve industrial heritage.

<sup>18</sup>To obtain the adjusted measure we modify Equation (3) by regressing the actual change in the ranking between 1992 and 2016 on the historical level of income in 1925, GDP level in 1992, and the long-term income rank mobility (1925–2016). The residual from this regression is our adjusted measure for short-term income rank mobility. To account for the East-specific differences, we additionally adjust the short-term RIRM measure by including a dummy for the East German location to account for all East-typical post-reunification developments. We indicate this measure as "East-adjusted" in the respective regression specifications.

<sup>19</sup>[www.rottenplaces.de](http://www.rottenplaces.de). The magazine's archive includes an overview of the most significant industrial heritage sites and industrial ruins.



**TABLE 2** Accounting for short-term economic development and East-German-specific effects

	(1)	(2)	(3)	(4)
Reversed income rank mobility index (RIRM), 1925–2015	0.465***	0.466***	0.211**	0.236***
	0.052	0.054	0.083	0.084
	[0.393]	[0.393]	[0.178]	[0.199]
Reversed income rank mobility index (RIRM), 1992–2015	–0.704***		–0.364***	
	0.090		0.098	
	[–0.292]		[–0.151]	
Reversed income rank mobility index (East-adjusted), 1992–2015		–0.202		–0.005
		0.127		0.106
		[–0.073]		[–0.002]
Historical controls Table 1	Yes	Yes	Yes	Yes
Current controls Table 1 (Models 5–7)	No	No	Yes	Yes
Constant	–0.890***	–1.005***	–1.406**	–1.744**
	0.174	0.185	0.687	0.683
R <sup>2</sup>	0.339	0.260	0.543	0.526

Note: The dependent variable is the share of votes for the populist AfD party in the Federal elections of September 2017. Robust standard errors below coefficient estimates. Standardized coefficients in square brackets. The number of observations (regions) is 394 in all models. All continuous variables are log-transformed.

Abbreviations: AfD, Alternative für Deutschland; RIRM, reversed income rank mobility.

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

The results shown in Table 3 (Models 1 and 2) are in line with our reasoning. The estimates reveal that there is a remarkable interaction between the presence of industrial heritage and long-term decline, positively affecting voting for the AfD. There is still a positive right-wing populist voting effect for long-term declining regions without industrial heritage sites, but this effect is significantly stronger for declining regions that host such sites.<sup>20</sup> Our results are robust with different measures for industrial heritage also considering significant industrial ruins (see Table A6 in the appendix).

In a final step, we explore the role of highly skilled employees, as this symptom of economic decline turned out to be a relevant factor in our main analysis (Table 3, Models 3 and 4). To this end, we interact the share of (non) highly skilled employees with our indicators for preserved industrial heritage. It turns out that there is a notable interaction between the share of non-highly skilled employees and preserved industrial heritage (Models 3–5). This finding means that a lack of high-skilled employment and the prevalence of industrial heritage sites is positively linked to right-wing populist voting. Introducing this interaction implies that there is no significant interaction link between long-term economic decline and industrial heritage anymore (Model 3). Hence, in the presence of

<sup>20</sup>Note that we have continuous–dummy interaction in our model. This means that the effect sizes can be directly derived from the tables. For example, in Table 3 Model 2, the coefficient estimates for economic decline in regions without significant industrial heritage sites is 0.216. On the basis of the interaction term, the effect of economic decline in places with an industrial heritage is 0.745 (0.216 + 0.529). In such models, the constituting dummy (i.e., dummy for heritage sites) cannot be properly interpreted. It measures the specific effect in the situation where income rank mobility is zero (for details, see Brambor et al., 2006).

**TABLE 3** Role of collective memory

	(1)	(2)	(3)	(4)	(5)
Industrial heritage sites ( $n > 1$ ) = 1	0.032	0.063	-4.933*	-5.732***	-3.378**
	0.058	0.060	2.546	2.046	1.592
	[0.011]	[0.022]	[-1.684]	[-1.957]	[-1.153]
Reversed income rank mobility index (RIRM)	0.447***	0.216***	0.212**	0.212**	-0.028
	0.055	0.083	0.084	0.083	0.040
	[0.377]	[0.183]	[0.179]	[0.179]	[-0.024]
Reversed income rank mobility index (RIRM) × industrial heritage sites ( $n > 1$ )	0.928***	0.539***	0.138		
	0.154	0.184	0.174		
	[0.125]	[0.073]	[0.019]		
Share of employees with non-tertiary degree			-0.036	-0.035	2.192***
			0.244	0.243	0.158
			[-0.007]	[-0.007]	[0.427]
Share of employees with non-tertiary degree × industrial heritage sites ( $n > 1$ )			1.161**	1.353***	0.765**
			0.593	0.471	0.360
			[1.753]	[2.042]	[1.155]
Historical controls Table 1	Yes	Yes	Yes	Yes	Yes
Current controls Table 1 (Models 5–7)	No	Yes	Yes	Yes	Yes
Planning-region fixed effects	No	No	No	No	Yes
Constant	-1.071***	-1.944***	-1.427	-1.426	-12.817***
	0.182	0.684	1.268	1.266	0.783
$R^2$	0.273	0.534	0.531	0.531	0.956

Note: The dependent variable is the share of votes for the populist AfD party in the Federal elections of September 2017. Robust standard errors below coefficient estimates. Standardized coefficients in square brackets. The number of observations (regions) is 394 in all models. All continuous variables are log-transformed. In Models 3–5, it is not controlled for the employment share of highly skilled employees as in these models the employment share of non-highly skilled employees is interacted with the presence of industrial heritage sites

Abbreviations: AfD, Alternative für Deutschland; RIRM, reversed income rank mobility.

\* $p < 0.1$ , \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

industrial heritage, regions with a higher share of less-educated population provide a fruitful ground for the spread of right-wing populist parties (Models 3–5). It is also remarkable that this pattern is robust when controlling for planning-region fixed effects (Model 5).

The interaction effect we find indicates a stronger activation of collective memory (through the presence of industrial heritage sites) among less-educated people. This aligns with the “cultural backlash” perspective, which argues that less-educated people are less mobile and exhibit a higher degree of regional identity, more localism, and less cosmopolitanism. At the same time the finding is in line with the “globalization/modernization backlash” hypothesis as this pattern is emerging in places facing long-term economic decline. A stronger identification with the local environment is likely to fuel the grievance about long-term decline that becomes visible through the remnants of past local success. Altogether, our findings suggest that human

capital is an important channel through which collective memory about past economic success translates into right-wing populist voting in declining regions.<sup>21</sup>

## 6 | DISCUSSION AND CONCLUSIONS

Our analysis of German regions shows that voters in regions facing long-term economic decline are more likely to vote for right-wing populist parties. This is consistent with Rodríguez-Posé'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 that on average experienced dramatic long-term decline. 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.

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, the historical vote share for extreme right-wing parties, unemployment, and the share of the population with a tertiary education degree.

We argue that our results are explained by a collective memory of past economic success in declining regions. This reasoning can be confirmed when observing the interaction between economic decline and the local presence of significant industrial heritage sites fueling populist voting. We also find an indication that this pattern is linked to the human capital of the local population with the effect being stronger in regions with a higher share of non-highly skilled employees.

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 as 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 (Rodríguez-Posé, 2018).

Further research should explore the effects of long-term economic development on the behavior of the regional population. This particularly includes the sources of a region-specific collective memory and its persistence. Our analyses indicated that the strength of the effect of a collective memory on individual behavior may considerably differ according to a person's educational level. Other factors that may play a role in this regard could be a person's experiences in other regions and, hence, their mobility. Regional history may have a stronger effect on those who spent their whole life in a certain place than for other people. Altogether, several further contextual factors may explain why people in declining but also in prospering regions cast their votes for populist parties. Therefore, future research is clearly warranted.

### ACKNOWLEDGMENT

Financial support provided by the German Federal Ministry of Education and Research in the framework of a joint research project *Modernisierungsblockaden in Wirtschaft und Wissenschaft der DDR* (Obstacles to Modernization in

<sup>21</sup>RIRM becomes insignificant when introducing dummies for planning regions (Model 5). This comes as no surprise, given the very low degrees of freedom in these models.

the Economy and Science of the GDR; project number 01UJ1806DY) is gratefully acknowledged. Open Access funding enabled and organized by Projekt DEAL.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## ORCID

Maria Greve  <https://orcid.org/0000-0001-5855-9753>

Michael Fritsch  <https://orcid.org/0000-0003-0337-4182>

Michael Wyrwich  <https://orcid.org/0000-0001-7746-694X>

## REFERENCES

- Allport, G. (1979). *The nature of prejudice* (Unabridged 3rd ed.). Addison-Wesley.
- Arzheimer, K. (2015). The AfD: Finally a successful right-wing populist eurosceptic party for Germany? *West European Politics*, 38(3), 535–556. <https://doi.org/10.1080/01402382.2015.1004230>
- Arzheimer, K. (2019). "Don't mention the war!" how populist right-wing radicalism became (almost) normal in Germany. *JCMS: Journal of Common Market Studies*, 57(S1), 90–102. <https://doi.org/10.1111/jcms.12920>
- Arzheimer, K., & Berning, C. C. (2019). How the alternative for Germany (AfD) and their voters veered to the radical right, 2013–2017. *Electoral Studies*, 60, 102040. <https://doi.org/10.1016/j.electstud.2019.04.004>
- Arzheimer, K., & Carter, E. (2009). Christian religiosity and voting for west European radical right parties. *West European Politics*, 32(5), 985–1011. <https://doi.org/10.1080/01402380903065058>
- Bailey, M., Cao, R., Kuchler, T., Stroebel, J., & Wong, A. (2018). Social connectedness: Measurement, determinants, and effects. *Journal of Economic Perspectives*, 32(3), 259–280. <https://doi.org/10.1257/jep.32.3.259>
- Becker, S. O., Fetzter, T., & Novy, D. (2017). Who voted for Brexit? A comprehensive district-level analysis. *Economic Policy*, 32(92), 601–650. <https://doi.org/10.1093/epolic/eix012>
- Bieber, I., Roßteutscher, S., & Scherer, P. (2018). Die Metamorphosen der AfD-Wählerschaft: Von einer euroskeptischen Protestpartei zu einer (r)echten Alternative? *Politische Vierteljahresschrift*, 59, 433–461. <https://doi.org/10.1007/s11615-018-0103-y>
- Binder, W. (2021). Memory culture, the civil sphere, and right-wing populism in Germany: The resistible rise of the Alternative für Deutschland (AfD). In J. C. Alexander, P. Kivisto, & G. Sciortino (Eds.), *Populism in the civil sphere* (pp. 178–204). Polity.
- bin Zaid, H., & Joshi, D. K. (2018). Where does right-wing populism succeed sub-nationally? Explaining regional variation within France. *Populism*, 1(2), 87–115. <https://doi.org/10.1163/25888072-00001011>
- Boeri, T., Mishra, P., Papageorgiou, C., & Spilimbergo, A. (2018). *Populism and civil society* [IMF Working Paper: WP/18, 245]. International Monetary Fund. <https://doi.org/10.5089/9781484382356.001>
- Brambor, T., Clark, W. R., & Golder, M. (2006). Understanding interaction models: Improving empirical analyses. *Political Analysis*, 14(1), 63–82. <https://doi.org/10.1093/pan/mpi014>
- Broz, J. L., Frieden, J., & Weymouth, S. (2021). Populism in place: The economic geography of the globalization backlash. *International Organization*, 9, 1–31. <https://doi.org/10.1017/S0020818320000314>
- Brubaker, R. (2017). Why populism? *Theory and Society*, 46(5), 357–385. <https://doi.org/10.1007/s11186-017-9301-7>
- Burda, M. C., & Hunt, J. J. (2001). From reunification to economic integration: Productivity and the labor market in eastern Germany. *Brookings Papers on Economic Activity*, 2001(2), 1–92. <https://EconPapers.repec.org/RePEc:bin:bpeajo:v:32:y:2001:i:2:p:1-92>
- Cantoni, D., Hagemeister, F., & Westcott, M. (2019). *Persistence and activation of right-wing political ideology* [Rationality and Competition Discussion Paper Series No. 143]. Ludwig Maximilian University.
- Corbett, D. (1991). *Unemployment in interwar Germany. 1924–1938* [Dissertation].
- David, R. J., Sine, W. D., & Serra, C. K. (2005). Institutional theory and entrepreneurship: Taking stock and moving forward. In C. E. Johnson (Ed.), *Meeting the ethical challenges of leadership: Casting light or shadow* (2nd ed., pp. 671–687). SAGE Publications. <https://doi.org/10.4135/9781446280669.n26>
- Decker, F. (2016). The "alternative for Germany:" Factors behind its emergence and profile of a new right-wing populist party. *German Politics and Society*, 34(2), 1–16. <https://doi.org/10.3167/gps.2016.340201>
- DeHanas, D. N., & Shterin, M. (2018). Religion and the rise of populism. *Religion, State and Society*, 46(3), 177–185. <https://doi.org/10.1080/09637494.2018.1502911>

- Dijkstra, L., Poelman, H., & Rodríguez-Pose, A. (2020). The geography of EU discontent. *Regional Studies*, 54(6), 737–753. <https://doi.org/10.1080/00343404.2019.1654603>
- Dinas, E., Matakos, K., Xefteris, D., & Hangartner, D. (2019). Waking up the golden dawn: Does exposure to the refugee crisis increase support for extreme-right parties? *Political Analysis*, 27(2), 244–254. <https://doi.org/10.1017/pan.2018.48>
- Dippel, C., Gold, R., Heblich, S., & Pinto, R. (2022). The effect of trade on workers and voters. *The Economic Journal*, 132(641), 199–217. <https://doi.org/10.1093/ej/ueab041>
- Easterlin, R. A. (2001). Income and happiness: Towards a unified theory. *The Economic Journal*, 111(473), 465–484. <https://doi.org/10.1111/1468-0297.00646>
- Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In P. David & W. Melvin (Eds.), *Nations and households in economic growth* (pp. 89–125). Stanford University Press.
- Essletzbichler, J., Disslbacher, F., & Moser, M. (2018). The victims of neoliberal globalisation and the rise of the populist vote: A comparative analysis of three recent electoral decisions. *Cambridge Journal of Regions, Economy and Society*, 11(1), 73–94. <https://doi.org/10.1093/cjres/rsx025>
- Essletzbichler, J., & Forcher, J. (2022). “Red Vienna” and the rise of the populist right. *European Urban and Regional Studies*, 29(1), 126–141. <https://doi.org/10.1177/09697764211031622>
- Falter, J. W. (1991). *Hitlers Wähler*. Beck.
- Förtner, M., Belina, B., & Naumann, M. (2020). The revenge of the village? The geography of right-wing populist electoral success, anti-politics, and austerity in Germany. *Environment and Planning C: Politics and Space*, 45(5), 239965442095180. <https://doi.org/10.1177/2399654420951803>
- Fotopoulos, G., & Storey, D. J. (2017). Persistence and change in interregional differences in entrepreneurship: England and Wales, 1921–2011. *Environment and Planning A: Economy and Space*, 49(3), 670–702. <https://doi.org/10.1177/0308518X16674336>
- Fritsch, M., Sorgner, A., Wyrwich, M., & Zazdravnykh, E. (2019). Historical shocks and persistence of economic activity: Evidence on self-employment from a unique natural experiment. *Regional Studies*, 53(6), 790–802. <https://doi.org/10.1080/00343404.2018.1492112>
- Fritsch, M., & Wyrwich, M. (2018). Regional knowledge, entrepreneurial culture, and innovative start-ups over time and space—An empirical investigation. *Small Business Economics*, 51(2), 337–353. <https://doi.org/10.1007/s11187-018-0016-6>
- Gerling, L., & Kellermann, K. L. (2022). Contagious populists: The impact of election information shocks on populist party preferences in Germany. *European Journal of Political Economy*, 72, 102098. <https://doi.org/10.1016/j.ejpoleco.2021.102098>
- Gieryn, T. F. (2000). A space for place in sociology. *Annual Review of Sociology*, 26(1), 463–496. <https://doi.org/10.1146/annurev.soc.26.1.463>
- Giuliano, P., & Wacziarg, R. (2020). Who voted for Trump? Populism and social capital. (NBER Working Paper 27651) National Bureau of Economic Research. <https://doi.org/10.3386/w27651>
- Goerres, A., Spies, D. C., & Kumlin, S. (2018). The electoral supporter base of the alternative for Germany. *Swiss Political Science Review*, 24(3), 246–269. <https://doi.org/10.1111/spsr.12306>
- Gordon, I. R. (2018). In what sense left behind by globalisation? Looking for a less reductionist geography of the populist surge in Europe. *Cambridge Journal of Regions, Economy and Society*, 11(1), 95–113. <https://doi.org/10.1093/cjres/rsx028>
- Guriev, S., & Papaioannou, E. (2022). The political economy of populism. *Journal of Economic Literature*, 60(3), 753–832. Forthcoming. <https://www.aeaweb.org/articles?id=10.1257/jel.20201595>
- Haffert, L. (2022). The long-term effects of oppression: Prussia, political Catholicism, and the Alternative für Deutschland. *American Political Science Review*, 116(2), 595–614. <https://doi.org/10.1017/S0003055421001040>
- Hainmueller, J., & Hopkins, D. J. (2014). Public attitudes toward immigration. *Annual Review of Political Science*, 17(1), 225–249. <https://doi.org/10.1146/annurev-polisci-102512-194818>
- Hansen, M. A., & Olsen, J. (2019). Flesh of the same flesh: A study of voters for the Alternative for Germany (AfD) in the 2017 Federal election. *German Politics*, 28(1), 1–19. <https://doi.org/10.1080/09644008.2018.1509312>
- Haug, S. (2008). Migration networks and migration decision-making. *Journal of Ethnic and Migration Studies*, 34(4), 585–605. <https://doi.org/10.1080/13691830801961605>
- Hefe, P. (1998). *Die Verlagerung von Industrie- und Dienstleistungsunternehmen aus der SBZ: Unter besonderer Berücksichtigung Bayerns (1945–1961)/Peter Hefe. Beiträge zur Unternehmensgeschichte: Bd.4*. Franz Steiner Verlag.
- Hirschle, J., & Kleiner, T. M. (2014). Regional cultures attracting interregional migrants. *Urban Studies*, 51(16), 3348–3364. <https://doi.org/10.1177/0042098013516687>
- Hoerner, J. M., Jaax, A., & Rodon, T. (2019). The long-term impact of the location of concentration camps on radical-right voting in Germany. *Research & Politics*, 6(4), 2053168019891376. <https://doi.org/10.1177/2053168019891376>

- Homola, J., Pereira, M. M., & Tavits, M. (2020). Legacies of the Third Reich: Concentration camps and out-group intolerance. *American Political Science Review*, 114(2), 573–590. <https://doi.org/10.1017/S0003055419000832>
- Immerzeel, T., Jaspers, E., & Lubbers, M. (2013). Religion as catalyst or restraint of radical right voting? *West European Politics*, 36(5), 946–968. <https://doi.org/10.1080/01402382.2013.797235>
- Jankowski, M., Schneider, S. H., & Tepe, M. (2019). To adapt or to defend? Comparing position shifts among Bundestag candidates between 2013 and 2017. *West European Politics*, 42(4), 895–913. <https://doi.org/10.1080/01402382.2019.1576106>
- Jones, C., Lee, J. Y., & Lee, T. (2020). Institutionalizing place: Materiality and meaning in Boston's north end. In P. Haack, J. Sieweke & L. Wessel (Eds.), *Research in the sociology of organizations: Microfoundations of institutions* (Vol. 65B, pp. 211–239). Emerald Publishing Limited. <https://doi.org/10.1108/S0733-558X2019000065B016>
- Kenny, M., & Luca, D. (2021). The urban–rural polarization of political disenchantment: An investigation of social and political attitudes in 30 European countries. *Cambridge Journal of Regions, Economy and Society*, 14(3), 565–582. <https://doi.org/10.1093/cjres/rsab012>
- Kremer, A. (2021). Home is where the history is: How today's migration in Germany is shaped by regional identity. *Journal of Regional Science*, 62(2), 604–638. <https://doi.org/10.1111/jors.12578>
- Lee, N., Morris, K., & Kemeny, T. (2018). Immobility and the Brexit vote. *Cambridge Journal of Regions, Economy and Society*, 11(1), 143–163. <https://doi.org/10.1093/cjres/rsx027>
- Los, B., McCann, P., Springford, J., & Thissen, M. (2017). The mismatch between local voting and the local economic consequences of Brexit. *Regional Studies*, 51(5), 786–799. <https://doi.org/10.1080/00343404.2017.1287350>
- Marzouki, N., McDonnell, D., & Roy, O. (Eds.). (2016). *Saving the people: How populists hijack religion*. Oxford University Press.
- McCann, P. (2020). Perceptions of regional inequality and the geography of discontent: Insights from the UK. *Regional Studies*, 54(2), 256–267. <https://doi.org/10.1080/00343404.2019.1619928>
- Mehic, A. (2022). Regional aspects of immigration-related changes in political preferences. *Journal of Regional Science*, 92(5), 1–28. <https://doi.org/10.1111/jors.12608>
- Mosely, P. E. (1950). The occupation of Germany: New light on how the zones were drawn. *Foreign Affairs*, 28(4), 580. <https://doi.org/10.2307/20030798>
- Mudde, C. (2004). The Populist Zeitgeist. *Government and Opposition*, 39(4), 541–563. <https://doi.org/10.1111/j.1477-7053.2004.00135.x>
- Mullis, D. (2019). Urban conditions for the rise of the far right in the global city of Frankfurt: From Austerity urbanism, post-democracy and gentrification to regressive collectivity. *Urban Studies*, 58(1), 131–147. <https://doi.org/10.1177/0042098019878395>
- Norris, P., & Inglehart, R. (2019). The cultural backlash theory. In P. Norris & R. Inglehart (Eds.), *Cultural backlash* (Vol. 17, pp. 32–64). Cambridge University Press. <https://doi.org/10.1017/9781108595841.003>
- Noury, A., & Roland, G. (2020). Identity politics and populism in Europe. *Annual Review of Political Science*, 23(1), 421–439. <https://doi.org/10.1146/annurev-polisci-050718-033542>
- Ochsner, C., & Rösel, F. (2017). Activated History - The case of the Turkish sieges of Vienna (CESifo Working Paper Series 6586). CESifo. [https://ideas.repec.org/p/ces/ceswps/\\_6586.html](https://ideas.repec.org/p/ces/ceswps/_6586.html)
- Olsen, J. (2018). The left party and the AfD. *German Politics and Society*, 36(1), 70–83. <https://doi.org/10.3167/gps.2018.360104>
- van der Waal, J., & de Koster, W. (2015). Why do the less educated oppose trade openness? A test of three explanations in the Netherlands. *European Journal of Cultural and Political Sociology*, 2(3–4), 313–344. <https://doi.org/10.1080/23254823.2016.1153428>
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon & Schuster.
- Rauhut, D. (2018). A Rawls–Sen approach to spatial injustice. *Social Science Spectrum*, 4, 109–122. <https://www.socalspectrum.in/index.php/sp/article/view/132>
- Rickardsson, J. (2021). The urban–rural divide in radical right populist support: The role of resident's characteristics, urbanization trends and public service supply. *The Annals of Regional Science*, 67, 211–242. <https://doi.org/10.1007/s00168-021-01046-1>
- Rickardsson, J., Mellander, C., & Bjerke, L. (2021). The Stockholm syndrome: The view of the capital by the “places left behind.” *Cambridge Journal of Regions, Economy and Society*, 14(3), 601–617. <https://doi.org/10.1093/cjres/rsab013>
- Rodden, J. (2019). *Why cities lose: The deep roots of the urban–rural political divide*. Basic Books.
- Rodríguez-Pose, A. (2018). The revenge of the places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society*, 11(1), 189–209. <https://doi.org/10.1093/cjres/rsx024>
- Rodríguez-Pose, A. (2020). The rise of populism and the revenge of the places that don't matter. *LSE Public Policy Review*, 1(1), 205, Article 4. <https://doi.org/10.31389/lseppr.4>

- Rodríguez-Pose, A., Lee, N., & Lipp, C. (2021). Golfing with Trump. Social capital, decline, inequality, and the rise of populism in the US. *Cambridge Journal of Regions, Economy and Society*, 14(3), 457–481. <https://doi.org/10.1093/cjres/rsab026>
- Rodrik, D. (2021). Why does globalization fuel populism? Economics, culture, and the rise of right-wing populism. *Annual Review of Economics*, 13(1), 133–170. <https://doi.org/10.1146/annurev-economics-070220-032416>
- Satyanath, S., Voigtländer, N., & Voth, H.-J. (2017). Bowling for fascism: Social capital and the rise of the Nazi party. *Journal of Political Economy*, 125(2), 478–526. <https://doi.org/10.1086/690949>
- Schmalz, S., Singe, I., & Hasenohr, A. (2021). Political discontent and labour in a post-growth region: A view from East Germany. *Anthropological Theory*, 21(3), 364–385. <https://doi.org/10.1177/1463499620982784>
- Schneider, L. (2020). Deindustrialisierung und Wahlverhalten. *Wirtschaftsdienst*, 100(10), 787–792. <https://doi.org/10.1007/s10273-020-2764-6>
- Segovia, J., Pontarollo, N., & Orellana, M. (2021). Discontent with democracy in Latin America. *Cambridge Journal of Regions, Economy and Society*, 14(3), 417–438. <https://doi.org/10.1093/cjres/rsab020>
- Siegers, P., & Jedinger, A. (2020). Religious immunity to populism: Christian religiosity and public support for the alternative for Germany. *German Politics*, 30(2), 149–169. <https://doi.org/10.1080/09644008.2020.1723002>
- Sleifer, J. (2006). Planning ahead and falling behind: The East German economy in comparison with West Germany 1936–2002. *Jahrbuch für Wirtschaftsgeschichte, Beihefte*, 8. (Vol. 8). Akademie Verlag.
- Spenkuch, J. L., & Tillmann, P. (2018). Elite influence? Religion and the electoral success of the Nazis: Religion and the success of the Nazis. *American Journal of Political Science*, 62(1), 19–36. <https://doi.org/10.1111/ajps.12328>
- Statistische Ämter des Bundes und der Länder. (Ed.). (2018). *Einkommen der privaten Haushalte in den kreisfreien Städten und Landkreisen der Bundesrepublik Deutschland 1995 bis 2016: Reihe 2, Kreisergebnisse Band 3*. Statistisches Landesamt Baden-Württemberg.
- Statistisches Reichsamt. (1929). Einkommen- und Körperschaftsteuerveranlagung für 1925. In *Statistik des Deutschen Reichs* (Band 348). Verlag von Reimar Hobbing.
- Tipton, F. B. (1976). *Regional variations of economic development of Germany during the nineteenth century*. Wesleyan University Press.
- Ullmann, H.-P. (2005). *Der deutsche Steuerstaat – Geschichte der öffentlichen Finanzen vom 18. Jahrhundert bis heute*.
- Van Hauwaert, S. M., Schimpf, C. H., & Dandoy, R. (2019). Populist demand, economic development and regional identity across nine European countries: Exploring regional patterns of variance. *European Societies*, 21(2), 303–325. <https://doi.org/10.1080/14616696.2019.1583355>
- Weisskircher, M. (2020). The strength of far-right AfD in eastern Germany: The east–west divide and the multiple causes behind ‘populism’. *The Political Quarterly*, 91(3), 614–622. <https://doi.org/10.1111/1467-923X.12859>
- Wolf, N. (2018). Regional economic growth in Germany, 1895–2010. In N. Wolf & J. R. Rosés (Eds.), *Routledge explorations in economic history: Vol. 82. The economic development of Europe's regions: A quantitative history since 1900* (1st ed., pp. 149–176). Routledge.
- Zukin, S. (2011). Reconstructing the authenticity of place. *Theory and Society*, 40(2), 161–165. <https://doi.org/10.1007/s11186-010-9133-1>

**How to cite this article:** Greve, M., Fritsch, M., & Wyrwich, M. (2023). Long-term decline of regions and the rise of populism: The case of Germany. *Journal of Regional Science*, 63, 409–445. <https://doi.org/10.1111/jors.12627>



## APPENDIX A

TABLE A1 Definition of variables

Variable	Definition	Expected sign
Income per capita, 1925	Income per inhabitant, in 1000 Reichsmarks <sup>a</sup>	
Current income per capita	Disposable income of private households per inhabitant in 2015, in thousand Euro <sup>b</sup>	-
Reversed income rank mobility index (adjusted), RIRM	Reversed value of the variance in changes in regional income position that is not due to income per capita in 1925	+
Share of votes for extreme right-wing parties over all votes, 1928	Share for extreme right-wing parties votes over all votes in 1928 (%)	+
Population density, 1925 (log)	Inhabitants per km <sup>2</sup> in 1925	-
Employment share in manufacturing and mining, 1925	Share of employees in manufacturing and mining over all employees in 1925	+
Share of population with higher education (%), 2015	Share of employees with tertiary education over all employees in 2015	-
Unemployment rate, 2017	Share of unemployed in the labor force in %, 2017 <sup>c</sup>	+
Share of population over 65 years old, 2015	Share of population over 65 years old over total population in 2015 <sup>d</sup>	+
Declining population	Change of population between 1925 and 2015, in %	-
Accessibility	Average car travel time to the nearest IC/ICE station in minutes <sup>d</sup>	+
Share of foreign-born population, 2015	Share of foreign-born population over total population in 2015 <sup>d</sup>	
Religion	Share of protestants among total population in 2011 <sup>e</sup>	
Social capital	A relative probability of a Facebook friendship link between two given Facebook uses from one region <sup>f</sup>	

<sup>a</sup>Statistics of the German Empire, Vol. 348.

<sup>b</sup>National Accounts of the Federal States, 2017.

<sup>c</sup>Employment statistics of the Federal Employment Agency.

<sup>d</sup>Federal Office for Building and Regional Planning.

<sup>e</sup>2011 German Census.

<sup>f</sup>Bailey et al. (2018).



**TABLE A2** Descriptive statistics

	Mean	Standard deviation	Minimum	Maximum
AfD vote share, 2017	0.133	0.053	0.049	0.35
AfD vote share, 2013	0.046	0.011	0.022	0.085
AfD vote share, 2021	0.113	0.059	0.029	0.321
Income per capita, 1925, in 1000 Reichsmarks	0.188	0.06	0.049	0.385
Income per capita, 2015, in 1000 EUR	21.163	2.467	15.846	34.287
Reversed income rank mobility (RIRM) index (adjusted)	0	0.303	-0.566	0.588
Population density, 1925	322.605	509.144	32.715	3020.887
Employment share in manufacturing and mining, 1925	0.27	0.138	0.051	0.658
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
Share of foreign-born population, 2015	0.089	0.049	0.019	0.336
Share of population over 65 years old, 2015	0.216	0.025	0.155	0.299
Accessibility, in minutes	21.997	15.422	0	79
Share of population with higher education, 2016, in %	12.111	5.742	5.1	40
Unemployment rate in % 2017	5.338	2.414	1.5	14
Religion	0.317	0.175	0.045	0.759
Social capital	7,610,000	5,740,000	234,000	30,500,000
Industrial heritage	0.017	0.131	0	1

Abbreviation: AfD, Alternative für Deutschland.

TABLE A3 Correlation table

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Afd vote share, 2017	1																
2 Afd vote share, 2013	0.621	1															
3 Afd vote share, 2021	0.961	0.557	1														
4 Income per capita, 1925	0.002	0.2	-0.026	1													
5 Income per capita, 2015	-0.421	-0.033	-0.491	0.121	1												
6 Reversed income rank mobility index, RIRM	0.443	0.102	0.511	0.015	-0.902	1											
7 Log of population density, 1925	-0.049	0.085	-0.115	0.266	-0.148	0.169	1										
8 Employment share in manufacturing and mining, 1925	0.215	0.283	0.191	0.209	-0.168	0.198	0.731	1									
9 Share for extreme right-wing parties votes over all votes, 1928	0.017	-0.057	0.065	0.08	-0.125	0.137	-0.085	-0.103	1								
10 Population change, 1925–2015	-0.379	-0.084	-0.453	0.161	0.51	-0.457	-0.106	-0.146	-0.117	1							
11 Share of foreign-born population, 2015	-0.412	-0.022	-0.52	0.222	0.385	-0.359	0.538	0.304	-0.276	0.463	1						
12 Share of population over 65 years old, 2015	0.522	0.336	0.601	0.016	-0.355	0.422	-0.066	0.255	0.245	-0.415	-0.54	1					
13 Accessibility	0.253	0.012	0.318	-0.255	-0.078	0.089	-0.502	-0.213	0.072	-0.269	-0.48	0.323	1				
14 Share of population with higher education, 2016	-0.147	0.157	-0.231	0.402	0.219	-0.132	0.536	0.239	-0.049	0.346	0.472	-0.303	-0.512	1			

(Continues)

TABLE A3 (Continued)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
15 Unemployment rate, 2017	0.207	0.07	0.25	0.137	-0.628	0.658	0.535	0.512	0.114	-0.312	0.018	0.404	-0.207	0.055	1		
16 Religion	-0.33	-0.104	-0.24	0.091	0.026	-0.042	-0.067	-0.031	0.377	-0.014	-0.055	0.126	0.038	-0.17	0.076	1	
17 Social capital	0.217	-0.101	0.299	-0.43	-0.176	0.172	-0.404	-0.276	0.091	-0.312	-0.447	0.32	0.465	-0.513	-0.165	0.019	1

Abbreviations: AfD, Alternative für Deutschland; RIRM, reversed income rank mobility.



TABLE A4 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Table 1 (5)	Table 1 (6)	Table 1 (7)	Table 1 (8)	Table 2 (1)	Table 2 (2)	Table 2 (3)	Table 2 (4)	Table 3 (1)	Table 3 (2)	Table 3 (3)	Table 3 (4)	Table 3 (5)
Share of employees with non-tertiary degree											-0.036	-0.035	2.192***
											0.244	0.243	0.158
											[-0.007]	[-0.007]	[0.427]
Share of employees with non-tertiary degree x industrial heritage sites (n > 1)											1.161**	1.353***	0.765**
											0.593	0.471	0.360
											[1.753]	[2.042]	[1.155]
Population density 1925 (log)	-0.068**	-0.014***	0.030	-0.080***	-0.159***	-0.145***	-0.075***	-0.068**	-0.141***	-0.074***	-0.056**	-0.056**	0.030*
	0.027	0.004	0.021	0.021	0.019	0.021	0.027	0.028	0.021	0.027	0.028	0.028	0.018
	[-0.201]	[-0.286]	[0.088]	[-0.236]	[-0.468]	[-0.426]	[-0.221]	[-0.202]	[-0.417]	[-0.217]	[-0.165]	[-0.164]	[0.088]
Share for extreme right-wing parties votes over all votes, 1928	-0.009	0.013	-0.064***	-0.094***	-0.006	-0.012	-0.013	-0.009	-0.017	-0.006	-0.002	-0.003	-0.034**
	0.022	0.016	0.017	0.020	0.025	0.025	0.022	0.022	0.025	0.022	0.022	0.022	0.015
	[-0.017]	[0.026]	[-0.118]	[-0.173]	[-0.010]	[-0.023]	[-0.024]	[-0.016]	[-0.030]	[-0.010]	[-0.004]	[-0.005]	[-0.063]
Employment share manufacturing (including mining), 1925	0.224***	0.125***	0.079***	0.116***	0.289***	0.272***	0.227***	0.224***	0.251***	0.224***	0.225***	0.224***	0.054***
	0.039	0.023	0.022	0.025	0.041	0.043	0.040	0.040	0.042	0.039	0.039	0.039	0.020
	[0.364]	[0.328]	[0.129]	[0.189]	[0.470]	[0.442]	[0.368]	[0.364]	[0.407]	[0.364]	[0.365]	[0.364]	[0.088]
Share of population with higher education	0.094*	0.001	-0.388***				0.047	0.094*		0.094*			
	0.051	0.000	0.036				0.055	0.052		0.051			
	[0.105]	[0.073]	[-0.434]				[0.053]	[0.105]		[0.106]			

TABLE A4 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Table 1 (5)	Table 1 (6)	Table 1 (7)	Table 1 (8)	Table 2 (1)	Table 2 (2)	Table 2 (3)	Table 2 (4)	Table 3 (1)	Table 3 (2)	Table 3 (3)	Table 3 (4)	Table 3 (5)
Population change, 1925–2015	-0.211***	-0.008***	0.055**	-0.070**	-0.201***	-0.211***	-0.206***	-0.183***	-0.206***	-0.183***	-0.182***	0.043*	0.043*
	0.046	0.003	0.027	0.033	0.045	0.046	0.047	0.046	0.047	0.046	0.046	0.046	0.025
	[-0.268]	[-0.150]	[0.069]	[-0.089]	[-0.255]	[-0.268]	[-0.261]	[-0.232]	[-0.261]	[-0.232]	[-0.231]	[-0.231]	[0.055]
Share of foreign-born population	-0.070	-0.068	-0.026	0.009	-0.066	-0.071	-0.067	-0.085	-0.067	-0.085	-0.085	-0.085	-0.026
	0.054	0.074	0.033	0.042	0.053	0.054	0.055	0.055	0.055	0.055	0.054	0.054	0.032
	[-0.114]	[-0.063]	[-0.041]	[0.014]	[-0.106]	[-0.114]	[-0.108]	[-0.137]	[-0.108]	[-0.137]	[-0.138]	[-0.138]	[-0.042]
Share of population over 65 years old	0.553***	0.668***	-0.055	0.027	0.590***	0.554***	0.517***	0.520***	0.517***	0.520***	0.523***	0.523***	-0.212**
	0.194	0.126	0.094	0.128	0.195	0.193	0.196	0.198	0.196	0.198	0.197	0.197	0.085
	[0.179]	[0.321]	[-0.018]	[0.009]	[0.191]	[0.179]	[0.167]	[0.168]	[0.167]	[0.168]	[0.169]	[0.169]	[-0.069]
Accessibility	-0.001	0.000	-0.001	0.000	-0.001	-0.001	-0.001	-0.002	-0.001	-0.002	-0.002	-0.002	-0.001
	0.001	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	[-0.031]	[0.010]	[-0.038]	[0.017]	[-0.031]	[-0.031]	[-0.048]	[-0.065]	[-0.048]	[-0.065]	[-0.065]	[-0.065]	[-0.027]
Unemployment rate	-0.162***	-0.004**	0.105***	0.159***	-0.127**	-0.161**	-0.147**	-0.162***	-0.147**	-0.162***	-0.163***	-0.163***	0.124***
	0.059	0.001	0.040	0.051	0.062	0.062	0.060	0.061	0.060	0.061	0.060	0.060	0.038
	[-0.205]	[-0.164]	[0.132]	[0.201]	[-0.160]	[-0.204]	[-0.186]	[-0.205]	[-0.186]	[-0.205]	[-0.206]	[-0.206]	[0.158]
Religion	-0.185***	-0.110***	0.080***	0.080**	-0.157***	-0.185***	-0.187***	-0.195***	-0.187***	-0.195***	-0.195***	-0.195***	0.049*
	0.026	0.011	0.030	0.034	0.027	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.028
	[-0.305]	[-0.365]	[0.131]	[0.131]	[-0.258]	[-0.305]	[-0.307]	[-0.321]	[-0.307]	[-0.321]	[-0.321]	[-0.321]	[0.080]

(Continues)

TABLE A4 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Table 1 (5)	Table 1 (6)	Table 1 (7)	Table 1 (8)	Table 2 (1)	Table 2 (2)	Table 2 (3)	Table 2 (4)	Table 3 (1)	Table 3 (2)	Table 3 (3)	Table 3 (4)	Table 3 (5)
Social capital	0.070*** [0.162]	0.000	-0.033** [-0.078]	0.029* [0.068]	0.016	0.016	0.060** [0.139]	0.070*** [0.162]	0.080***	0.080***	0.066***	0.066***	-0.026**
Planning-region dummies	No	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes
Constant	-1.746**	0.080***	-1.671***	-2.757***	-0.890***	-1.005***	-1.406***	-1.744**	-1.071***	-1.944***	-1.427	-1.426	-12.817***
	0.682	0.030	0.339	0.428	0.174	0.185	0.687	0.683	0.182	0.684	1.268	1.266	0.783
R <sup>2</sup>	0.526	0.545	0.947	0.917	0.339	0.260	0.543	0.526	0.273	0.534	0.531	0.531	0.956

Note: 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 below coefficient estimates. Standardized coefficients in square brackets.

Abbreviations: AfD, Alternative für Deutschland; RIRM, reversed income rank mobility.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

TABLE A5 Auxiliary regressions: The role of historical income and income rank mobility for current regional conditions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Population change 1925–2015	Share of foreign-born population	Share of population over 65 years old	Accessibility	Share of population with higher education	Unemployment rate	Religion	Social capital
<i>Panel A (without planning-region fixed effects)</i>								
Income per capita, 1925	0.232*** [0.170]	0.040 [0.023]	-0.010 [0.029]	-7.858*** [0.170]	0.381*** [0.317]	0.069 [0.051]	0.159* [0.090]	-0.881*** [0.353]
Reversed income rank mobility index (RIRM), 1925–2015	-0.789*** [0.071]	-0.939*** [0.072]	0.132*** [0.017]	8.017*** [0.158]	-0.311*** [0.055]	0.842*** [0.049]	-0.321*** [0.092]	0.589*** [0.109]
Population density 1925 (log)	0.002 [0.004]	0.384*** [0.702]	-0.055*** [0.497]	-9.071*** [0.623]	0.207*** [0.545]	0.117*** [0.273]	-0.051 [0.091]	-0.441*** [0.558]
Share for extreme right-wing parties votes over all votes, 1928	-0.079*** [0.028]	-0.193*** [0.029]	0.047*** [0.269]	0.514 [0.022]	0.001 [0.002]	0.074*** [0.107]	0.331*** [0.370]	0.094* [0.074]
Employment share manufacturing (including mining), 1925	-0.093** [0.043]	-0.220*** [0.046]	0.108*** [0.012]	5.217*** [0.197]	-0.037 [0.053]	0.165*** [0.212]	0.182*** [0.180]	0.089 [0.062]
Constant	0.616*** [0.200]	-5.186*** [0.229]	-1.021*** [0.054]	63.248*** [0.324]	1.959*** [0.455]	1.494*** [0.144]	0.190 [0.306]	16.597*** [0.336]
R <sup>2</sup>	0.362	0.588	0.402	0.324	0.455	0.663	0.174	0.493

(Continues)



TABLE A5 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Population change 1925–2015	Share of foreign-born population	Share of population over 65 years old	Accessibility	Share of population with higher education	Unemployment rate	Religion	Social capital
<i>Panel B (with planning-region fixed effects)</i>								
Income per capita, 1925	0.108	0.129**	-0.062***	-9.391***	0.203***	-0.057	0.014	-0.752***
	0.082	0.064	0.023	2.745	0.068	0.054	0.078	0.130
	[0.079]	[0.075]	[-0.179]	[-0.204]	[0.169]	[-0.042]	[0.008]	[-0.301]
Reversed income rank mobility index (RIRM), 1925–2015	-0.113	0.152*	-0.044	2.102	-0.596***	0.468***	-0.142	0.503***
	0.128	0.090	0.028	3.398	0.088	0.060	0.092	0.166
	[-0.075]	[0.080]	[-0.115]	[0.041]	[-0.450]	[0.312]	[-0.073]	[0.182]
Population density 1925 (log)	-0.068**	0.275***	-0.038***	-8.808***	0.316***	0.140***	-0.089***	-0.382***
	0.031	0.022	0.007	0.880	0.024	0.015	0.023	0.045
	[-0.157]	[0.502]	[-0.345]	[-0.605]	[0.831]	[0.325]	[-0.159]	[-0.483]
Share for extreme right-wing parties votes over all votes, 1928	0.026	-0.004	0.034***	-1.367	0.062*	0.074***	0.364***	0.071
	0.038	0.031	0.011	1.455	0.034	0.023	0.033	0.064
	[0.038]	[-0.004]	[0.192]	[-0.058]	[0.102]	[0.107]	[0.407]	[0.056]
Employment share manufacturing (including mining), 1925	0.164***	0.007	0.086***	3.182*	-0.099**	0.117***	0.122**	0.068
	0.054	0.039	0.015	1.892	0.046	0.029	0.052	0.094
	[0.210]	[0.007]	[0.431]	[0.120]	[-0.143]	[0.150]	[0.120]	[0.048]

TABLE A5 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Population change 1925–2015	Share of foreign-born population	Share of population over 65 years old	Accessibility	Share of population with higher education	Unemployment rate	Religion	Social capital
Constant	1.384***	-4.091***	-1.258***	44.618***	0.960***	1.275***	0.537**	16.024***
	0.290	0.228	0.084	9.241	0.306	0.163	0.258	0.529
R <sup>2</sup>	0.663	0.885	0.693	0.711	0.731	0.904	0.884	0.773

Note: Robust standard errors below coefficient estimates. Standardized coefficients in square brackets. The number of observations is 394 regions in all models.

Abbreviations: AfD, Alternative für Deutschland; RIRM, reversed income rank mobility.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

**TABLE A6** Alternative measures for industrial heritage

	(1)	(2)	(3)	(4)	(5)
Reversed income rank mobility index (RIRM), 1925–2015	0.185**	0.146*	0.212**	0.113	0.195**
	0.084	0.086	0.083	0.088	0.083
	[0.157]	[0.123]	[0.179]	[0.096]	[0.165]
Industrial heritage sites ( $n > 0$ )	-0.039				
	0.042				
	[-0.031]				
Significant industrial ruin ( $n > 0$ )		-0.053			
		0.048			
		[-0.054]			
Significant industrial ruin ( $n > 1$ )			-0.233*		
			0.124		
			[-0.139]		
Industrial heritage site + significant industrial ruin ( $n > 0$ )				-0.056	
				0.038	
				[-0.063]	
Industrial heritage site + significant industrial ruin ( $n > 1$ )					-0.113
					0.091
					[-0.082]
Reversed income rank mobility index (RIRM) × industrial heritage sites ( $n > 0$ )	0.532***				
	0.126				
	[0.138]				
Reversed income rank mobility index (RIRM) × significant industrial ruin ( $n > 0$ )		0.592***			
		0.127			
		[0.213]			
Reversed income rank mobility index (RIRM) × significant industrial ruin ( $n > 1$ )			0.903***		
			0.338		
			[0.183]		
Reversed income rank mobility index (RIRM) × industrial heritage site + significant industrial ruin ( $n > 0$ )				0.597***	
				0.109	
				[0.236]	
Reversed income rank mobility index (RIRM) × industrial heritage site + significant industrial ruin ( $n > 1$ )					0.714***
					0.247
					[0.181]
Historical controls Table 1	Yes	Yes	Yes	Yes	Yes



TABLE A6 (Continued)

	(1)	(2)	(3)	(4)	(5)
Current controls Table 1 (Models 5–7)	No	Yes	Yes	Yes	Yes
Constant	-1.938***	-2.239***	-1.939***	-2.229***	-2.090***
	0.682	0.690	0.698	0.688	0.688
R <sup>2</sup>	0.540	0.549	0.539	0.556	0.541

Note: The dependent variable is the share of votes for the populist AfD party in the Federal elections of September 2017. Robust standard errors below coefficient estimates. Standardized coefficients in square brackets. All continuous variables are log-transformed. The number of observations is 394 regions in all models.

Abbreviations: AfD, Alternative für Deutschland; RIRM, reversed income rank mobility.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

TABLE A7 Results for 2013 and 2021 elections

	(1)	(2)	(3)	(4) Log	(5) Log	(6)	(7) Log	(8) Log
<i>Panel A (2013 elections)</i>								
Reversed income rank mobility index (RIRM), 1925–2011	0.010***	0.002	0.002	0.020	0.062	0.006**	-0.053	-0.014
	0.003	0.002	0.002	0.036	0.059	0.003	0.045	0.042
	[0.295]	[0.047]	[0.053]	[0.026]	[0.083]	[0.161]	[-0.070]	[-0.019]
Income per capita, 2011	0.001***							
	0.000							
	[0.282]							
Constant	0.027***	0.051***	0.047***	-2.379***	-1.460***	0.016**	-1.833***	-2.053***
	0.008	0.003	0.003	0.114	0.484	0.007	0.350	0.338
R <sup>2</sup>	0.134	0.115	0.149	0.156	0.327	0.325	0.872	0.870
<i>Panel B (2021 elections)</i>								
Reversed income rank mobility index (RIRM), 1925–2019	0.082***	0.094***	0.094***	0.697***	0.305***	0.057***	-0.022	0.176***
	0.018	0.009	0.009	0.064	0.088	0.011	0.045	0.059
	[0.419]	[0.481]	[0.483]	[0.474]	[0.208]	[0.295]	[-0.015]	[0.120]
Income per capita, 2019	-0.002							

(Continues)

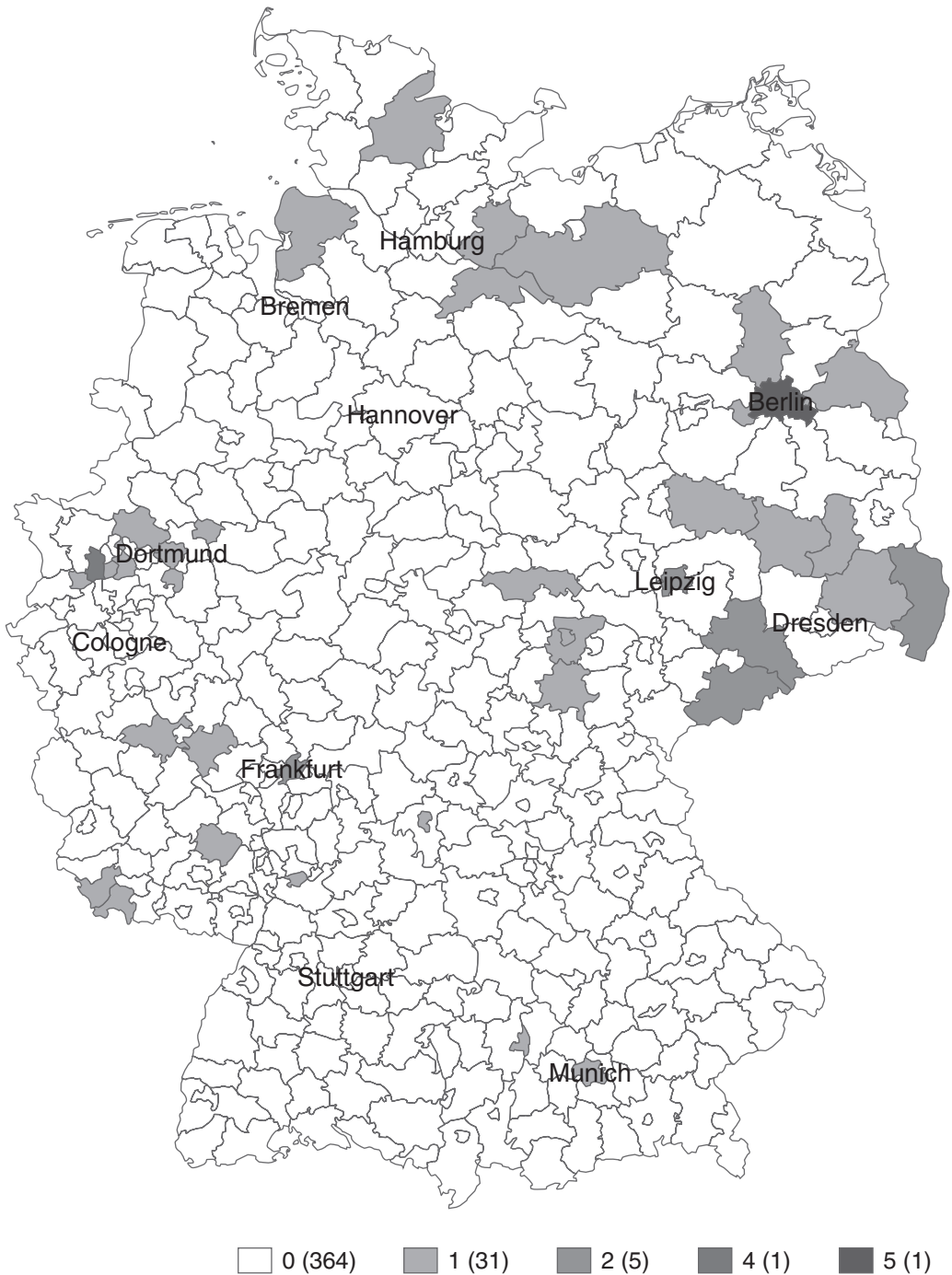
TABLE A7 (Continued)

	(1)	(2)	(3)	(4) Log	(5) Log	(6)	(7) Log	(8) Log
	0.002 [-0.071]							
Constant	0.263***	0.227***	0.225***	-0.555***	-2.011***	0.086***	-1.529***	-3.010***
	0.052	0.014	0.014	0.213	0.759	0.030	0.360	0.528
R <sup>2</sup>	0.391	0.390	0.390	0.372	0.645	0.624	0.962	0.926

Note: The dependent variable in panel A is the share of votes for the populist AfD party in the Federal elections of September 2013, and in panel B it is the share of votes for the populist AfD party in the Federal elections of September 2021. All controls are the same as in Table 1 but adjusted for the respective time periods. Robust standard errors below coefficient estimates. Standardized coefficients in brackets. "Log" indicates that predictors are log-transformed. The number of observations (regions) is 394 in all models.

Abbreviations: AfD, Alternative für Deutschland; RIRM, reversed income rank mobility.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .



**FIGURE A1** Locations of significant industrial heritage sites. Significant industrial heritage sites are extracted from the online magazine *Rottenplaces*. Numbers in parentheses in the legend indicate the number of regions in each category. The map comprises 401 counties in total.