

Original Article

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Immigration and anti-immigrant voting in the 2017 German parliamentary election

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Abstract: We empirically examine the relationship between immigration and votes for the *Alternative für Deutschland* (AfD) in the 2017 German parliamentary election. We conduct a cross-sectional analysis, exploiting election results and socio-demographic as well as geographic features of the 401 German administrative districts. We find that immigration has a negative effect on AfD voting. A 1 percentage point increase in the share of foreigners is associated with a decrease in the AfD vote share of up to 0.37 percentage points. The result is robust to several estimation variations, such as addressing the potentially endogenous distribution of foreigners with an instrumental variable analysis.

Keywords: migration, anti-immigrant voting, refugee crisis, contact theory

JEL Classification: C31, D72, J15, P16

1 Introduction

Due to the large and sudden inflow of asylum seekers between 2014 and 2016, immigration was the dominant issue in a highly controversial political debate prior to the 2017 German parliamentary election. By loudly voicing concerns about the government's ability to manage the so-called *refugee crisis*, the right-wing populist party *Alternative für Deutschland* (AfD) achieved remarkable electoral successes and was the first immigration-opposing party to enter the federal parliament in the post-war period. Strikingly, AfD vote shares were systematically higher in constituencies with relatively lower population shares of foreigners. This contradicts the intuitive findings of several recent empirical studies, which observe that anti-immigrant sentiment and right-wing support increase in the wake of mi-

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grant inflows (Becker and Fetzer 2017; Cools et al. 2021; Dustmann et al. 2019; Edo et al. 2019; Hainmueller and Hangartner 2013; Halla et al. 2017; Hangartner et al. 2019).

In this paper, we examine this observation, specifically regarding a potentially causal negative relationship between the presence of immigrants and anti-immigrant voting. To this end, we conduct a cross-sectional, local-level OLS analysis of 2017 election outcomes in the 401 German administrative districts. Since the eligibility to vote in German federal elections is restricted to those holding a German passport, we measure the expression of anti-immigrant sentiment in terms of votes cast by German natives and naturalized citizens. Our dataset comprises information on official vote shares and population shares of foreign residents as well as on electorally relevant social and economic features of districts. Our baseline results imply that immigration has a significantly negative impact on anti-immigrant voting. As the overall share of foreigners in a district increases by 1 percentage point, the AfD vote share decreases by up to 0.37 percentage points. Increases in the number of asylum seekers, however, are positively related to AfD voting.

We make two key contributions to the related literature. First, we explicitly distinguish the impact of general immigration from that of asylum seekers as a migrant subgroup. Most earlier approaches either study the impact of foreigners in general (Barone et al. 2016; Brunner and Kuhn 2018; Edo et al. 2019; Halla et al. 2017; Otto and Steinhardt 2014) or of refugees in particular (Dinas et al. 2019; Dustmann et al. 2019; Schaub et al. 2020; Sekeris and Vasilakis 2016; Steinmayr 2021; Tomberg et al. 2021; Vasilakis 2018) on political behavior.¹ Yet, simultaneously considering multiple types of migrants allows us to highlight how potentially better integrated, long-term immigrants may influence political behavior differently than a short-term refugee influx. Our approach thus yields novel insights into the motives for anti-immigrant voting, which may relate to the type, origin or role of migrants in society.

Second, we enhance previous empirical approaches by addressing the particular issue of spatial spillovers (Bratti et al. 2020; Jasny and Becker 2020; Schaub et al. 2020). In that sense, the presence of immigrants or the economic conditions in a district may influence voting behavior in neighboring areas. We account for this inter-district dependence by means of a spatial autoregressive model. To the best of our knowledge, we are the first to study the impact of immigration on vot-

¹ Some related studies also focus on refugees because they are exogenously distributed across the receiving country which allows scholars to work around the issue of an endogenous distribution of immigrants (Gehrsitz and Ungerer 2018; Jasny and Becker 2020; Schaub et al. 2020).

ing, focusing exclusively on this most recent general election in Germany. Given Germany's long history of immigration but also its problematic relationship with right-wing policies, the country represents a particularly interesting case to study.

While the previous literature generally agrees on the fact that immigration shapes native voting behavior, the direction of the effect is theoretically ambiguous. The classic theory on the political economy of migration suggests that natives may perceive immigrants as a form of *ethnic* or *economic competition*. Customs in the receiving country may lose importance if immigrants import and maintain their own culture (Golder 2003; Hatton 2016; Lucassen and Lubbers 2012). Furthermore, a labor supply shock induced by immigration may reduce wages and employment prospects of low-skilled natives, resulting in a higher vote share for anti-immigrant parties, in particular in areas with a constrained labor market (Borjas 2017; Halla et al. 2017; Ottaviano and Peri 2012). By contrast, the *contact theory* (Allport 1954) supposes the opposite to be true. Regular personal interactions and cultural exchange between immigrants and natives help reduce prejudices so that the native population is less prone to electorally oppose immigration. A number of studies testing these hypotheses find immigration to foster anti-immigrant sentiment at the local level, particularly in regards to the latest refugee inflow into Europe (Dustmann et al. 2019; Edo et al. 2019; Halla et al. 2017; Hangartner et al. 2019; Harmon 2017; Mendez and Cutillas 2014; Sekeris and Vasilakis 2016). Some studies, however, provide evidence in favor of the contact theory (Gehrsitz and Ungerer 2018; Lonsky 2021; Schindler and Westcott 2021; Steinmayr 2021).

When investigating the relationship in question, the main empirical issue to be addressed is the potentially non-random distribution of immigrants throughout the receiving country. Larger migrant communities are expected to be found in urban areas with affordable housing, better economic conditions or pre-existing communities of compatriots. Previous studies therefore instrument the share of immigrants by either historic immigration patterns (Altındağ and Kaushal 2020; Edo et al. 2019; Halla et al. 2017), housing availability (Harmon 2017; Steinmayr 2021) or proximity to either a point of entry to the host country or to immigrant housing (Bratti et al. 2020; Hangartner et al. 2019; Mayda et al. 2020). Building upon these earlier studies, we test the robustness of our baseline results by means of an instrumental variable analysis. In the German case, using historic immigration patterns as an instrument seems most appropriate, since many migrant communities were established after World War II in the course of the migrant worker recruitment (Danzer and Yaman 2016; Jurgens 2010; Schmidt 1997). The German separation between 1949 and 1990, however, makes it hard to collect reliable figures on immigration during that period.

Therefore, we go further back in time, gathering population shares of Jewish residents in 1933 prior to their persecution by the Nazi regime. For centuries, the Jewish communities, comprising intellectuals, academics and entrepreneurs, have contributed to the economic and social development of their residential areas, which later became attractive settlement destinations with positive economic prospects (Johnson and Koyama 2017, 2019; Pascali 2016). In that sense, areas in which Jewish population shares were larger were more industrialized and represented a main destination of work migrants after World War II. Importantly, Jewish communities are not regarded as migrant communities, but their prevalence constitutes a proxy for industrialization and urbanization, thus, for factors which shaped immigration in later periods. Furthermore, Jewish groups contributed to cultural richness and a longer habituation to social and religious diversity in the respective areas. To account for changes in the district structure, we hand-calculate from historic figures the hypothetical shares of Jews that would be present if territorial boundaries had been the same in 1933 as they are today. As a complementary instrument, we use the 1995 share of foreigners at the district level to capture today's immigration pattern.

Not only do certain areas particularly attract immigrants, but economic conditions and voting behavior may also spill over into neighboring districts (Jasny and Becker 2020; Schaub et al. 2020). We allow for spatial interdependence in our estimation, including weighted averages of AfD support as well as of other district characteristics as additional explanatory variables. Our main results remain qualitatively stable. Yet, we find that higher AfD support as well higher unemployment rates in surrounding areas significantly add to AfD vote shares in a district. To further underpin our conclusion that the relationship between immigration and AfD voting may be causal, we provide some plausibility tests. Specifically, we do not observe any effect of immigration on AfD voting in the 2013 German election, during which immigration was not a similarly salient issue.

To dig deeper, we investigate geographic heterogeneity of the observations. Strikingly, the negative impact of immigration on voting is significantly stronger in districts in the former German Democratic Republic in the east, which constitutes the main AfD stronghold. Immigration is historically lower there, entailing a higher potential for a contact effect to manifest in those areas that are less accustomed to migration. Furthermore, while increases in forced migration for asylum tend to AfD voting, immigrants from culturally closer EU countries seem to particularly help reduce anti-immigrant voting. Taking these observations together, one may conclude that AfD voting did not exclusively serve as an expression of xenophobic attitudes but rather, or additionally, as electoral protest against the government and its handling of the latest refugee inflow.

The remainder of this paper is organized as follows. Section 2 outlines the general determinants of anti-immigrant voting and elaborates on the political situation in Germany prior to the 2017 election. Section 3 presents the used dataset and identification strategy. Baseline results and sensitivity tests are reported in section 4. Section 5 concludes.

2 Research framework

2.1 Anti-immigrant voting in the literature

By the term *anti-immigrant party*, we refer to a political movement whose program includes or is solely based on a strong disapproval of foreigners permanently residing in the party's home country. In datasets analyzing party characteristics, such as the Manifesto Data Project (MDP) or the Chapel Hill Expert Survey (CHES), such parties are mostly classified as *nationalist*, *radical right-wing* or *populist right-wing* (Bakker et al. 2019; Volkens et al. 2019). The motivations behind voter support for these movements have extensively been examined in the scientific literature. By and large, they include economic, socio-cultural and psychological motives.

With regard to the economic dimension, the *economic competition theory* supposes that the relationship between facing economic grievances and opposing immigration is positive. The native population competes with immigrants for scarce resources, such as state transfers, housing and job opportunities (Bo et al. 2019; Halla et al. 2017; Hanson et al. 2007). Specifically, migrants moving from less developed countries into richer, industrialized ones are usually considered low skilled by the receiving society (Borjas 2017; Ottaviano and Peri 2012). Since these immigrants primarily compete with low-skilled native labor suppliers, the latter are expected to favor more restrictive immigration policies (Bellettini et al. 2020; Bo et al. 2019; Bridges and Mateut 2014; Hanson et al. 2007; Mayda 2006; O'Rourke and Sinnott 2006). High-skilled workers and capital owners, by contrast, gain from a rise in complementary immigrant labor supply, so they tend to hold a more welcoming attitude toward immigrants (Borjas 2017; Hanson et al. 2007).

A sudden influx of foreigners may also cause reservations for social and cultural reasons, as outlined by the *ethnic competition theory* (Golder 2003; Hatton 2016; Lucassen and Lubbers 2012; Werts et al. 2012). Anti-immigrant movements often refer to immigrants as a *threat* to the receiving country's identity. When immigrants settle, they import cultural habits, religious practices, languages etc.,

that may be unknown to the native population. Similar to the struggle for economic resources, anti-immigrant parties claim that the immigrants' and the host country's values compete for cultural supremacy. Anti-immigrant parties often fuel fears that traditions of the host country may fade if immigrants are not urged to adopt the lifestyle of the native population (Golder 2003; Lucassen and Lubbers 2012).

Yet, another strand of literature reverses this reasoning. First brought forward by Allport (1954), the *contact theory* supposes that the relationship between immigration and anti-immigrant attitudes is negative. The argumentation builds on the assumption that regular, direct contact between immigrants and natives intensifies personal relationships and helps both groups acquire better knowledge about one another. By getting a deeper insight into the immigrants' lifestyle, the native population realizes that their own identity is not endangered by the presence of another ethnic or national group. Natives are then less inclined to support political movements that harm the interests of immigrants (Golder 2003; Schindler and Westcott 2021; Steinmayr 2021; Vasilopoulos et al. 2021).

Finally, the literature examines a third group of driving forces, namely psychological motives, such as actual xenophobic attitudes (de Vries et al. 2013; Rydgren 2008; van der Brug et al. 2000) or low life satisfaction (Poutvaara and Steinhart 2018). We neglect this third line in our framework, as we conduct an analysis at the aggregate level at which individual psychological determinants are hard to study.

The latest empirical research dealing with the question at hand provides mixed results. Some studies find a positive relationship between immigration and support for anti-immigrant movements (Barone et al. 2016; Dustmann et al. 2019; Edo et al. 2019; Halla et al. 2017; Hangartner et al. 2019; Harmon 2017; Jasny and Becker 2020; Mayda et al. 2020; Mendez and Cutillas 2014; Sekeris and Vasilakis 2016). However, in line with our observations, empirical evidence also exists in favor of the contact theory. Steinmayr (2021) finds that support for the populist right-wing FPÖ in Upper Austria is lower in communities that accepted more refugees during the latest immigration period. Similarly, Gehrtsitz and Ungerer (2018) find no evidence of an asylum influx being positively related to vote gains for the AfD in two German state elections in 2017. Very much in line with our results, Hornuf et al. (2020) observe xenophobic sentiments among citizens of former East Germany to be lower if they had access to Western TV in which foreign people and content were presented much more frequently. In another recent study, Schindler and Westcott (2021) investigate anti-immigrant sentiment in the UK, which is found to be lower in areas where the presence of African-American soldiers during World War II was greater. Lonsky (2021) observes that immigration reduces anti-immigrant voting in Finnish elections.

Importantly, the effect of immigration on anti-immigrant sentiments may vary with the type of migration. Mendez and Cutillas (2014) observe that Latin American immigrants in Spain tend to inspire feelings of solidarity among the Spanish, while immigration from Africa is associated with higher vote shares for right-wing parties. Brunner and Kuhn (2018) find similar effects in Switzerland when distinguishing between “culturally different” and “culturally similar” migrants. Likewise, those migrating for work or personal reasons may not evoke as strong of feelings among the natives as asylum seekers, both in a negative and positive way. Asylum seekers who are temporarily forced to rely on public transfers may cause feelings of solidarity as well as of unfair enrichment at the expense of the natives. Non-asylum seekers instead may be regarded as self-sufficient, contributing parts of society. Heterogeneous effects based on the type of immigration are thus conceivable. One main focus of our study is to consider such potentially differential effects of immigrants in general and asylum seekers in particular.

Two papers are somewhat close to ours, as they deal with immigration and political behavior in Germany in the context of the latest immigrant influxes. Schaub et al. (2020) study the impact of the refugee inflow in 2015 on voting and political attitudes. Their paper focuses on rural communities in Eastern Germany, employing survey data on political attitudes. While anti-immigrant sentiment may be prevalent in certain areas, the authors do not observe these attitudes to increase as a result of the refugee influx. However, unlike in our approach, Schaub et al. (2020) do not distinguish between foreigners in general and refugees as a subgroup. The same is true, to some extent, for the study by Tomberg et al. (2021). While their analysis includes both the share of asylum seekers and the share of foreigners, their emphasis lies on the former with the latter being rather a control variable. Furthermore, they investigate the role of refugee migration for all German federal elections since 1998 and explicitly examine the respective interplay with economic conditions. The results are, in fact, in line with ours: Larger shares of asylum seekers increase vote shares for the radical right, especially with higher unemployment rates (Tomberg et al. 2021). However, in our study, we provide more systematic evidence on the different roles of distinct types of migrants and tackle the issues of endogeneity and spatial spillovers.

Endogeneity is, in fact, the main empirical challenge regarding the research question at hand. The distribution of immigrants in the receiving country is usually non-random, for mainly three reasons. First and foremost, immigrants preferably settle in areas with a large diaspora of their fellow citizens (Card 2001). Not only does proximity to earlier immigrants facilitate the acclimatization in the new country, recent immigrants also benefit from contact to previous immigrants with respect to job searches or paperwork. Consequently, empirical studies use historic settlement patterns or past population shares of immigrants as instruments for

the current share of immigrants in a region (Altındağ and Kaushal 2020; Barone et al. 2016; Edo et al. 2019; Halla et al. 2017; Mendez and Cutillas 2014; Otto and Steinhardt 2014).²

Second, a crucial determinant of settlement decisions may be housing availability, in the case of both free settlement choices as well as assignment of residences, e. g., for refugees. Administrative units often place asylum seekers in areas with sufficiently available group housing. Consequently, the existence of or distance to such a facility is used as an instrument for the exposure to immigration (Bratti et al. 2020; Steinmayr 2021).

Third, certain groups of natives may be spatially closer to immigrants because they live near a border or other preferred point of entry to the host country, which encourages pragmatic immigrants to simply stay close by upon arrival. Considering Greece during the European refugee crisis, Sekeris and Vasilakis (2016) as well as Hangartner et al. (2019) instrument the number of refugees in a Greek municipality by the inverse distance to the Turkish border. In our empirical analysis, we follow a variant of the first approach on which we elaborate in section 3.2.

2.2 Recent immigration and anti-immigrant voting in Germany

Germany was among the countries that were most affected by the so-called *refugee crisis*. The term is widely used to describe the massive inflow of refugees and people in need of shelter into Europe between 2014 and 2016 (Gehrsitz and Ungerer 2018; Hangartner et al. 2019; Jasny and Becker 2020; Mader and Schoen 2019; Oststrand 2015; Schaub et al. 2020). The 2015 Migration Report issued by the Federal Office for Migration and Refugees mentions that some 900,000 asylum seekers³ arrived in Germany in 2015 alone, which corresponds to roughly 1.1 percent of the German population at that time. The total number of foreigners immigrating to Germany in 2015 was 2.02 million people, marking the all-time immigration high since 1950, when migration figures were first collected (Federal Office for Migration and Refugees 2016). Most of the asylum applicants were of Syrian origin with larger shares also from Afghanistan, Iraq and Somalia. Apart from that, Germany witnessed strong migrant inflows from Eastern European states such as Roma-

² Most of these studies argue that for the historic distribution to be a valid instrument, it should refer to a point in time when migration was conditionally exogenous, such as, first-time migration or officially ordered residence assignment.

³ See appendix table A.1 for exact figures.

nia or Poland.⁴ Furthermore, authorities have registered a steep increase in family reunions among non-EU migrants (Federal Office for Migration and Refugees 2016).

Upon arrival in Germany, asylum seekers are first registered by the Federal Office for Migration and Refugees and are then assigned to residential facilities throughout the country while their asylum application is processed. This distribution across federal states is based on the *Königsstein key*, a system of quotas according to which public expenses are split among the 16 federal states.⁵ Within a federal state, the distribution at the lower administrative level is conducted according to idiosyncratic state regulations (Federal Office for Migration and Refugees 2019b). Usually, similar quota systems like the *Königsstein key* or population figures are used to distribute asylum seekers across districts within a federal state (Jasny and Becker 2020; Schaub et al. 2020). Therefore, in our analyses, we control for demographic and economic district features, which determine the intra-state distribution of asylum seekers, as well as for state-fixed effects. We therefore assume the distribution of asylum seekers to be conditionally exogenous.

The large inflow of mainly refugee migrants caused very different reactions among the German population. While a majority of German natives showed an extraordinary amount of support, which manifested in welcoming gestures, donations and volunteer work, some Germans met the new arrivers with resentment. In particular, people expressed strong fears of labor market constraints, of exploitation of public transfers as well as of an increase in crime (Arzheimer and Berning 2019; Decker 2016).

These concerns were picked up by the *Alternative für Deutschland* (English: *Alternative for Germany*, AfD), a party at the right end of the political spectrum. When initially founded in 2013, the AfD was a market-liberal special-issue party, uttering severe criticism of the EU policies providing financial support to indebted member states (Arzheimer 2015; Arzheimer and Berning 2019; Jankowski et al. 2015). The party first ran in the general election in 2013 but failed to pass the required threshold of five percent of votes to enter the German Bundestag.⁶

In the aftermath of the 2013 federal election, support for the AfD kept growing as the party developed toward a nationalist and immigration-opposing platform

⁴ Immigration from these countries has been high since the EU East Expansion in 2004 and 2007 and mainly consists of work migrants.

⁵ Each state's share of total expenses depends on tax revenues and population size. In that sense, wealthier and more populated states host relatively more refugees.

⁶ For official election results for German Federal Elections, see the website of the Federal Returning Officer, <https://www.bundeswahlleiter.de/>

(Arzheimer and Berning 2019; Decker 2016). Its perception in public started to change during the refugee inflow as the AfD demanded an immediate stop to immigration from non-EU countries, especially from those with a majority of Muslims. While campaigning for the general election in 2017, the AfD harshly criticized the government's management of the refugee inflow and blamed immigrants for contributing to recent social challenges (Alternative für Deutschland 2017). Some party members caused intense controversy as they used clearly xenophobic language in public statements and even employed vocabulary used by the Nazi regime (Arzheimer 2015; Salzborn 2018; Vees-Gulani 2021). Although nationalism and right-wing radicalism are highly delicate issues in German politics and society, the AfD quickly achieved considerable electoral support (Decker 2016). The party entered all 16 German state parliaments within five years and became the largest opposition party in the federal parliament after the 2017 election.⁷

A second look at the MDP and CHES analyses allows us to compare the AfD's position to the other five major parties that gained seats in the 2017 election: the Christian-Democrats (CDU/CSU), the Social-Democrats (SPD), the Liberals (FDP), the Greens (Grüne) and the Left (Linke). Among these, the AfD is, by far, the right-most party on an aggregate left-right scale (see appendix figure A.1). Furthermore, the party scores exceptionally high on scales measuring the support for nationalism and a national way of life as well as the rejection of multiculturalism (see appendix figure A.2, see also Arzheimer and Berning (2019); Decker (2016)). Therefore, throughout the empirical analysis, we treat an AfD vote as the expression of anti-immigrant sentiment.

3 Methodology and data

3.1 Data and descriptive statistics

Our units of observation are the 401 German administrative districts (EU NUTS 3-level, *Kreise/Landkreise/kreisfreie Städte*). Most data is obtained from the German Federal Statistical Office, which provides official election results and voter turnout rates as well as the population shares of foreigners and the number of asylum seekers. Apart from that, the data comprise population shares of females, youth (18- to 24-year-olds), married individuals as well as of individuals devoted to a Christian religion. Several geographic and economic characteristics are taken

⁷ See footnote 6.

from the INKAR database of the Federal Institute for Research on Building, Urban Affairs and Spatial Development. Among these are the district GDP (absolute and per capita) as well as the disposable income per capita, the share of workers in the industrial sector, the share of households using broadband Internet (speed > 50 mbit/s), the share of high school dropouts, a binary indicator classifying a district as a rural area and the federal state a district is located in. The unemployment rate of civil labor suppliers is taken from the Federal Labor Agency. The March 1933 vote share for the NSDAP/Nazi party is used to control for historically translated anti-immigrant sentiment (Cantoni et al. 2019) and is taken from the dataset by Falter and Hänisch (1990). Finally, data on population shares of Jewish individuals are obtained from the 1933 census in the then-German Reich, of which the Federal Statistical Office provides scan versions.

Official AfD vote shares, as our outcome variable of interest, refer to the so-called *second vote*, which determines the distribution of seats to parties in the German Bundestag.⁸ All parties that succeed to obtain at least five percent of all valid second votes cast enter the parliament.⁹

The share of foreigners is defined as the percentage of residents of non-German nationality, relative to the whole population in a district, as of December 31, 2016, hence, at the beginning of the election year. Foreigners according to this definition include asylum applicants residing in the respective district. However, with separate figures available for this group, we can explicitly distinguish between asylum seekers and non-Germans with a different legal status. Apart from that, we differentiate between EU and non-EU immigrants. We also have informa-

8 We ignore the *first vote*, which represents the majoritarian part of the mixed German electoral system. While voters support a party list with their second vote, the first vote is given to the preferred local candidate to represent the constituency. Because not every party nominates a local candidate in every constituency, data for the first vote may be limited. Moreover, other candidate-specific features may play a role in the first vote, e. g., local renownedness or personal relationships.

9 According to the German electoral law, only persons of German nationality are allowed to vote in federal election, i. e., natives or naturalized citizens. Also note that administrative districts do not exactly correspond to electoral constituencies in federal elections. Districts are mostly historically grown areas or created in compliance with administration efficiency standards. By contrast, electoral constituencies according to German law have to contain an absolute number of eligible voters within a pre-defined narrow range to ensure that each constituency receives comparable weight in determining the election outcome. Therefore, adjacent districts may be split into several parts which are then recombined to form an electoral constituency. Constituencies, however, never cross state borders. Nonetheless, the Federal Statistical Office provides official conversions of election results to the level of administrative districts.

tion on individuals with a migration background¹⁰ according to the last German census in 2011.¹¹

Given the exceptional changes in migration patterns between 2014 and 2016, we explicitly distinguish between the general exposure to and salience of migration, as captured by the overall population share of foreigners, and the most recent immigration *shock* in terms of an asylum seeker inflow. The first, as we argue, is the crucial determinant for a contact effect to manifest. Permanent residents of foreign origin can enter in the necessary exchange with natives in their neighborhood, at work or in daily life. Long-term, non-German neighbors or co-workers can be regarded as fully integrated parts of society. Instead, as argued above, the sudden refugee inflow may inspire other feelings, e. g., of discontent with the government or fear of social exclusion. Therefore, in addition to the district share of foreigners, we obtain as an explanatory variable the percentage increase in the number of asylum seekers between 2014 and 2016. By that, we explicitly account for how strongly a district was affected by the migration *shock* (Levi et al. 2020).

With regard to the control variables, we include the latest available data prior to the 2017 election and create two groups of covariates. The group of *socio-demographic* controls includes the shares of females, youth, high school dropouts, married individuals and Christians as well as voter turnout rates. Voter turnout refers to the 2017 election, while the shares of females and youth are calculated as of December 31, 2016. The shares of married persons and Christians are figures from the 2011 census.¹² The share of high school dropouts refers to the entire year 2016. The group of *economic/geographic* covariates includes the indicator of rural area, the share of industry workers and the use of broadband Internet, all of which refer to the beginning of the election year 2017. These variables specifically account for a potential vulnerability of districts to international trade as well as for the underdevelopment of local supplies and modern technology, which may have an impact on radical protest voting.

10 The Federal Statistical Office attributes a migration background to German residents who were themselves born outside of Germany or have at least one parent born outside of Germany.

11 As the census is only conducted every ten years, younger data or projections for subsequent years are not available for this variable.

12 Despite the lag of six years between data elicitation and the general election, we argue that marital status, education as well as religious denomination are likely to remain sufficiently constant to still provide powerful information in 2017. As these figures were collected before the AfD was even founded, we can exclude that they were endogenously determined by the dependent variable. Steinmayr (2021) and Edo et al. (2019) face a similar problem and stick with the available data for these rather time-invariant variables.

As is explained in more detail in section 3.2, we complement the baseline results with an IV analysis. Our main IV is the 1933 share of Jews, which has been translated to the 2017 district structure. Data for the 1933 population share of Jews was hand-digitized from scanned versions of the 1933 census. Since German districts covered very different territories at that time, we lap two maps of German districts now and then to calculate the extent to which today's district areas correspond with 1933 districts.¹³ We then assign respective weights to the shares of Jewish individuals to calculate as-if shares for current districts. For instance, if historic districts *A* and *B* form today's district *C* and both *A* and *B* cover exactly 50 percent of *C*'s surface, we calculate the population share of Jews in *C* as 0.5 times the share of Jews in *A* plus 0.5 times the share of Jews in *B* (see figure A.4). By that, we get the Jewish population shares if the 1933 districts had already had today's territorial structure. The same strategy was used to translate the 1933 NSDAP vote shares to the current district structure.¹⁴

As an alternative IV, we use the 1995 share of foreigners (as of December 31, 1995), relative to the district population at that time. Here, we use data provided by the INKAR database. The year 1995 is the earliest point in time after the German reunification for which full data on the variable of interest is available.

Table 1 displays summary statistics for the used variables. The mean AfD vote share exhibits a strong upward trend in the last two elections. Figure 1a visualizes the distribution of AfD vote shares across administrative districts. There is a clearly evident structural break in voting patterns in 2017, as the AfD received systematically higher support in the Eastern Germany than in Western Germany.

The population share of foreigners at the beginning of the election year varies widely across districts, with figures between 1.9 and 39.7 percent. Taking a look at figure 1b, a similar but reversed pattern compared to the AfD vote share applies. The systematically lower foreigner shares in the Eastern regions trace back to their Socialist history, which implied an isolation with respect to international migration. The visual inspection of figures 1a and 1b clearly suggests a negative relationship between immigration and voting for the AfD at the local level. The respective correlation coefficient as displayed in table A.2 amounts to -0.415, confirming this impression.

Figure 2a shows the distribution of percentage increases in the number of asylum seekers across districts. The large inflows are reflected by percentage in-

¹³ All historic shapefiles used in this paper have been obtained from the Census Mosaic Project (Hubatsch and Klein 1975; MPIDR and CGG 2011).

¹⁴ Yet, there is no data available for the two contemporary districts of Neunkirchen and Region-alverband Saarbrücken. The respective region was under a League of Nations mandate in 1933 and did not participate in German elections.

Table 1: Summary statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
AfD vote share (%)	401	13.39	5.33	4.94	35.47
Share of foreigners (%)	401	10.30	5.60	1.86	39.74
Share of EU migrants (%)	401	4.59	2.93	0.44	23.71
Share of non-EU migrants (%)	401	5.71	3.18	0.79	22.98
Share of individuals with a migration background (%)	401	16.73	9.49	1.8	49.7
Share of asylum seekers	401	1.79	0.88	0.18	13.00
Δ Asylum seekers (%)	401	145.13	78.74	-29.8	908.1
Share of Jews 1933 (%)	401	0.40	0.49	0	4.58
Share of foreigners 1995 (%)	401	7.43	4.96	0.1	26.3
Unemployment rate (%)	401	5.77	2.60	1.4	14.7
Lagged AfD vote share (%)	401	4.71	1.09	2.23	8.68
NSDAP vote share 1933	399	45.30	11.07	16.07	77.89
Voter turnout (%)	401	75.84	3.71	64.08	84.39
Share of females (%)	401	50.61	0.65	48.35	52.70
Share of high school dropouts	401	5.97	2.09	1.2	14.2
Share of Christians (%)	401	62.28	21.65	5.93	91.90
Share of married (%)	401	46.60	3.38	34.73	52.00
Share of youth (%)	401	7.46	1.88	0.63	13.74
Rural area (n/y)	401	0.49	0.50	0	1
Share of industry workers (%)	401	18.24	8.72	0	90.2
Share of households with broadband Internet (%)	401	70.91	18.44	18.5	99.6
Eastern (n/y)	401	0.19	0.39	0	1
Federal state (cat.)	401	7.98	3.80	1	16

Notes: All values rounded to two decimal points if applicable. *Share of foreigners* refers to the district population share of non-German citizens as of December 31, 2016. There is only one common foreigners' office in charge of the six districts in the state of Saarland, of Kassel city and the surrounding district Kassel as well as of Cottbus city and the Spree-Neiße district, respectively. These districts are assigned an absolute number of foreigners equal to their share of the total population in the entire area. *Δ Asylum seekers* measures the percentage increase in the district number of asylum seekers between 2014 and 2016. *Unemployment rate* is the average percentage share of registered unemployed individuals relative to the total civil working population in a district in 2016. *NSDAP vote share 1933* refers to the imputed vote for the NSDAP/Nazi party in the general election in March 1933. No data is available for the current districts of Neunkirchen and Regionalverband Saarbrücken, as the region was under a League of Nations mandate in 1933. *Share of high school dropouts* refers to the share of students in a district leaving high school without a secondary degree. *Share of Christians* includes individuals devoted to either Catholicism or Protestantism. *Share of youth* refers to the population share of 18- to 24-year-olds. *Use of broadband Internet* measures the share of district households with an Internet speed of more than 50 mbit/s.

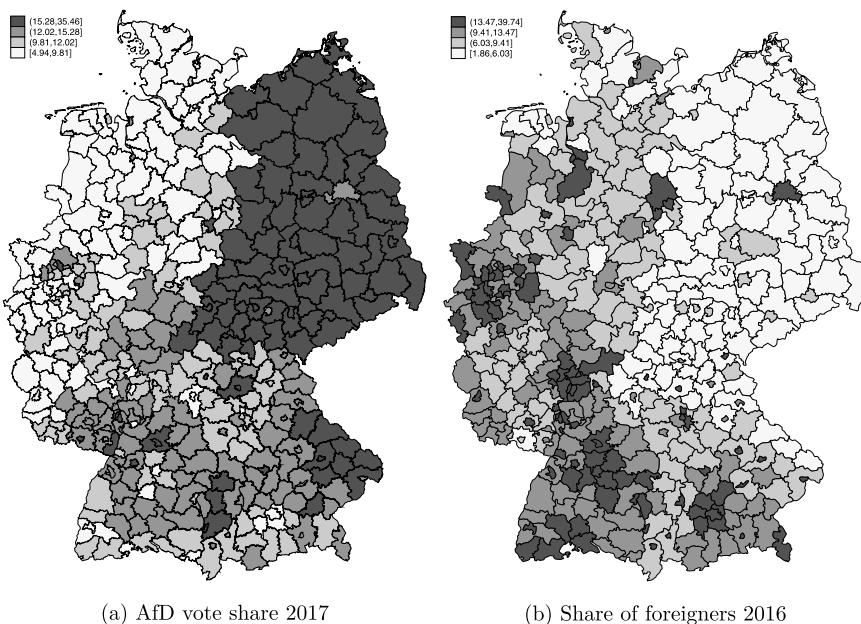


Figure 1: AfD vote shares and shares of foreigners in the 2017 German federal election.

creases of up to 900 percent within two years. In line with the earlier-mentioned supposed conditional exogeneity of asylum seekers' assigned locations, the increases seem relatively evenly spread across Germany, as compared to overall immigration.

Next, figure 2b shows the distribution of the 1933 population shares of Jews. These were rather low, with figures of less than 1 percent in most areas. However, larger Jewish communities existed in Western and Central Germany as well as in the greater Berlin area with population shares of up to 4 percent. Importantly, for our identification strategy to be valid, table A.2 indicates a positive correlation of 0.422 with the 2016 share of foreigners, which is significant at the 1 percent level. Comparing figures 1b and 2c, it is evident that there is a very strong correlation between the shares of foreigners in 2017 and 1995, which numerically amounts to 0.924, see appendix table A.2. We further discuss this issue and the use of the 1995 share of foreigners as an instrument in the following section.

One may wonder whether the structural differences in both immigration and AfD voting between Eastern and Western Germany imply different reactions of native voting behavior to immigration. When plotting the relationship between shares of foreigners and AfD vote shares, the picture in figure 3a supports our ini-

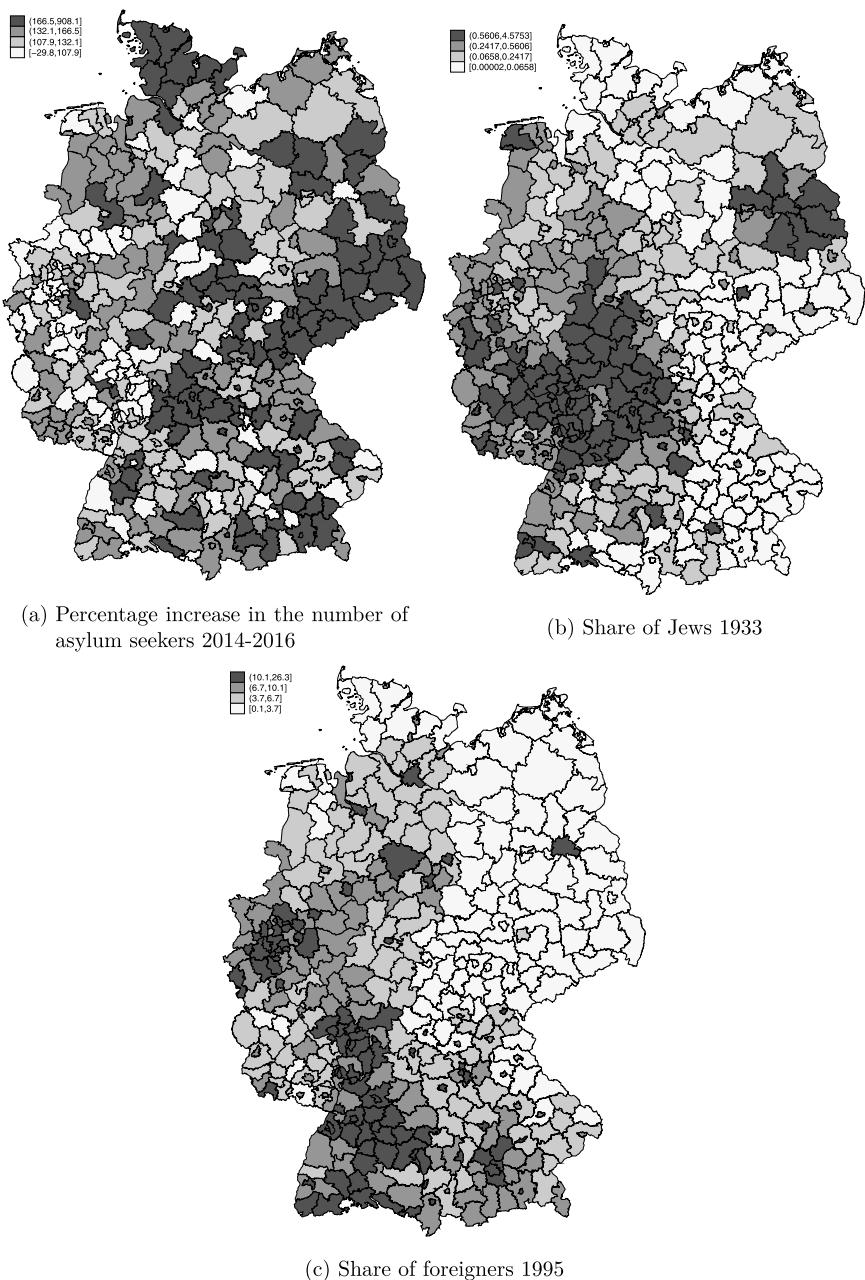


Figure 2: Δ Asylum seekers and IVs.

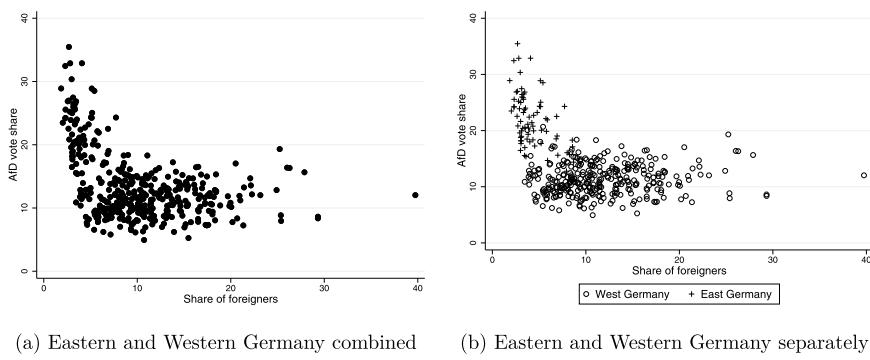


Figure 3: AfD voting and shares of foreigners.

tial impression of a negative, even non-linear relationship. Yet, when displaying separate plots for Eastern and Western German districts as in figure 3b, this impression changes. Obviously, there is a clearly negative correlation in the Eastern districts, whereas in the Western districts, the correlation appears to be, at best, small and positive. We later address these observations by investigating potential effect heterogeneity across regions.

3.2 Identification strategy

In order to test the relationship between immigration and AfD voting, we set up the following basic linear regression:

$$\begin{aligned} \text{VoteAfD}_{ij} = & \beta_0 + \beta_1 \text{Foreign}_{ij} + \beta_2 \Delta \text{Asylum}_{ij} + \beta_3 \text{VoteAfD2013}_{ij} \\ & + \beta_4 \text{Unemp}_{ij} + \beta_5 \mathbf{X}_{ij} + \lambda_j + u_{ij}, \end{aligned} \quad (1)$$

where VoteAfD_{ij} denotes the AfD vote share in district i located in federal state j in the 2017 federal election. Our main explanatory variable Foreign_{ij} denotes the population share of foreigners in district i in state j as of December 31, 2016. β_1 thus captures the average effect of a c. p. larger population share of foreigners on AfD support. As argued above, the effect of an increase in the share of foreigners may vary, depending on the type of immigrants considered. To account for these potential differences in several estimation variations, we replace Foreign_{ij} by other measures of immigration, namely the share of non-asylum seekers, the shares of EU and non-EU migrants as well as the share of individuals with a migration background. $\Delta \text{Asylum}_{ij}$ captures the percentage increase in the number of asylum seekers residing in district i between 2014 and 2016.

$Unemp_{ij}$ denotes the average unemployment rate of civil employees in a district in the pre-election year. $VoteAfd2013_{ij}$ is the vote share obtained in district i in the previous federal election held in 2013, hereby controlling for inertia in party preferences. \mathbf{X}_{ij} denotes the vector of socio-demographic and economic/geographic control variables. λ_j denotes a vector of federal-state dummies to account for unobserved heterogeneity at the federal-state level.

Taking a second look at figure 1, visual inspection suggests that AfD support clusters in certain regions. In that sense, there are some regions that are rather supportive while there are also larger areas, e. g., in the north, where the AfD is not really strong. It may thus be the case that observations are spatially dependent (Jasny and Becker 2020; Schaub et al. 2020). One potential explanation could be that voting decisions in neighboring districts influence political behavior in the district under observation (Cantoni et al. 2019; Voigtländer and Voth 2012). A comparable line of argument may apply to some of the explanatory variables that are not instrumented, e. g., the unemployment rate. Higher support for the AfD may not only be induced by an increase in a district's own unemployment rate but also by increases in the neighboring districts' unemployment rates, due to integrated labor markets and commuting. Moreover, Germany is a federal system where administrative districts within the same state are subject to the same state-level legislation and government. Policies regulating economic development or immigration are therefore identical and may have similar effects.

As an alternative specification, we therefore include in regression equation (2) weighted averages of AfD voting, unemployment rates and percentage increases in the number of asylum seekers in districts spatially close to district i under observation:

$$\begin{aligned} VoteAfd_{ij} = & \beta_0 + \beta_1 Foreign_{ij} + \beta_2 \Delta Asylum_{ij} + \beta_3 VoteAfd2013_{ij} \\ & + \beta_4 Unemp_{ij} + \mathbf{X}_{ij} + \mathbf{W} \mathbf{VoteAfd} + \mathbf{W} \mathbf{X} + \lambda_j + u_{ij}. \end{aligned} \quad (2)$$

\mathbf{W} denotes a weighting matrix, attributing a weight σ_k to a district $k \neq i$ based on proximity between k and i . **VoteAfd** and \mathbf{X} denote vectors of the mentioned variables in districts $k \neq i$. We use two different weighting schemes, one including only values of the mentioned variables for districts adjacent to i (*contiguity weighting*) and a second including variable values for all other districts, with weights decreasing in distance to i (*inverse-distance weighting*).

The regression in equation (1) may also yield biased estimates due to the non-random distribution of foreigners across the country. We address these concerns by applying an IV strategy as a robustness check, using the aforementioned historic instruments for the current share of foreigners. A possibly very accurate period to determine exogenous settlement would be the time of migrant worker recruitment in the 1960s and 1970s (Danzer and Yaman 2016; Jurgens 2010; Schmidt

1997). Workers migrating to (West) Germany did not choose their location of residence themselves but were assigned to a place in urgent need of labor supply, in particular in the industrial sector (Danzer and Yaman 2016). However, the German separation between 1949 and 1990 makes it hard to collect relevant and reliable data. While figures for East Germany should be treated with caution due to politically intended misreporting, even the data from West Germany is not of sufficient quality to conduct an analysis at an administratively low level, which would ensure sufficient data variation. We therefore prefer the above-mentioned instruments: the 1933 share of Jews and, as a complement, the 1995 share of foreigners.

We argue that the distribution of Jewish individuals in 1933, a point in time shortly before their systematic prosecution by the Nazi regime, fulfills both requirements of instrument validity. Regarding its relevance, we follow a slightly different argumentation than previous papers that used historic settlement patterns as an instrument. We do not consider the Jewish population foreigners in a narrow sense, whose presence directly attracted subsequent immigrants. In fact, at the beginning of the 20th century, many Jewish individuals had been born on German territory and were attributed a minority status only because their religious affiliation differed from the Christian majority (Mayer 1939; Voigtländer and Voth 2012). Instead, we acknowledge the contributions Jewish communities made to economic growth and urbanization in the 19th and 20th century, which determined the preferred settlement locations for later migrant groups. Johnson and Koyama (2017, 2019) find the European Jewish to have had a strongly positive impact on economic growth in the early modern era until the beginning of the industrialization. This influence is traced back to a human capital advantage over the Christian population, starting with basic skills such as literacy. According to their religious education principles, Jewish children learn how to read starting from a young age (Botticini and Eckstein 2005, 2007; Johnson and Koyama 2019). Such skills have allowed the Jews to specialize in professional activities such as trade, finance and banking since the Medieval Age (Becker and Pascali 2019; Botticini and Eckstein 2007; Finley and Koyama 2018; Hundert 1987; Toch 2008), professions that were also associated with the accumulation of wealth. In the same vein, Pascali (2016) observes a stronger economic performance in modern days in municipalities that had a larger Jewish community and related banking activities in the 16th century.

The Jewish Emancipation in the late 19th century in Germany implied an extension of Jewish civil rights, such as attending university (Johnson and Koyama 2017; Mayer 1939; Mosse 1989; Voigtländer and Voth 2012), which further increased Jewish economic success. In the early 20th century, a substantial share of leading companies was owned or managed by persons of Jewish origin (Mosse 1992; Windolf 2011). Specifically, many Jews were involved in companies active in retail (Lerner 2015; Mosse 1992) or industrial production (Mosse 1992; Pohl 1992;

Rosenthal 1944; Windolf 2011), thus firms with a high migrant worker demand after World War II.

Therefore, we take the existence of larger Jewish communities in the early 20th century as both an explanation and indicator for economic development and urbanization that attracted immigrant groups in later periods. Importantly, according to our line of argument, the share of Jews and economic development are positively correlated because the Jewish population helped *cause* this development, not because they were themselves attracted by an already prospering area.

What should not be left unmentioned is the very high level of antisemitism that Jewish communities in Germany faced, at more or less any given point in time. Economically successful Jews evoked feelings of envy among the German population and faced attacks and rejection. However, many Jews had historically been forced to engage in trading and banking activities due to restrictive, discriminatory laws that prevented them from choosing a more highly regarded career in, e.g., the public sector or the military (Botticini and Eckstein 2005; Mayer 1939). While some evidence indicates that the benefits from letting the Jewish population participate in the economic system fostered a peaceful co-existence between Germans and Jews (Johnson and Koyama 2017; Toch 2008; Voigtländer and Voth 2012), the social standing of the Jewish communities deteriorated more and more in the 1920s and 1930s. By the end of World War II, the Nazis had in the most inhumane way eliminated Jewish life and culture in Germany. While we can therefore rule out a direct impact of the existence of Jewish communities on settlement decisions of later immigrants or on voting, thereby fulfilling the exclusion restriction, we stress that the Jews left as a legacy their contribution to the economic development and socio-cultural diversity in their residential areas.

As an alternative instrument, we use the share of foreigners from 1995, which more closely resembles the IV strategies in related studies (see, e.g., Altindağ and Kaushal (2020); Edo et al. (2019); Halla et al. (2017); Lonsky (2021)). However, we remain cautious here. First, as has been illustrated in figures 1b and 2c, the 1995 and 2016 shares of foreigners are very similar. It is therefore questionable whether using the 1995 share of foreigners really helps solve the endogeneity issue or whether the migrant distribution back then was already subject to the same non-random settlement pattern. Second, to be even more in line with frequently used strategies in the literature, we would wish to employ the classic shift-share instrument¹⁵ by Card (2001). However, in order to do so, detailed information on

¹⁵ The shift-share instrument exploits the fact that immigrants often settle in the same regions as earlier immigrants from the same country. The inflow of immigrants from an origin country c to the host country at time t is multiplied with the share of immigrants from c to region r at an earlier

the origin countries of migrants is required, which is not collected in every German district. Therefore, we regard this strategy of using the 1995 share of foreigners as an instrument as a complement to our main IV analysis, but the causal nature of the results should not be overstated.

Translating these considerations into a two-stage regression, the first stage reads

$$\begin{aligned} Foreign_{ij} = & \delta_0 + \delta_1 Jew1933_{ij} + \delta_2 \Delta Asylum_{ij} + \delta_3 VoteAfD2013_{ij} \\ & + \delta_4 Unemp_{ij} + \mathbf{X}_{ij} + \mu_j + e_{ij}, \end{aligned} \quad (3)$$

where $Jew1933_{ij}$ is replaced by $Foreign1995_{ij}$ when using the second instrument.

Fitted values are used in the second-stage estimation:

$$\begin{aligned} VoteAfD_{ij} = & \beta_0 + \beta_1 \widehat{Foreign}_{ij} + \beta_2 \Delta Asylum_{ij} + \beta_3 VoteAfD2013_{ij} \\ & + \beta_4 Unemp_{ij} + \mathbf{X}_{ij} + \lambda_j + u_{ij}. \end{aligned} \quad (4)$$

4 Estimation results

4.1 Baseline results

Table 2 displays the estimation results for our basic OLS specification. Column (1) presents the estimates using the share of foreigners and the lagged dependent variable as the only explanatory variables. The percentage increase in the number of asylum seekers and the unemployment rate are added in column (2). Column (3) repeats the estimation in column (2), but uses the *share* of asylum seekers as a covariate instead of Δ Asylum seekers. Socio-demographic covariates are added in column (4), and economic/geographic covariates and federal-state FE are added in column (5). In all specifications, we estimate heteroskedasticity-robust standard errors.¹⁶

point in time t_0 , relative to the total number of immigrants from c who moved to the host country at time t_0 . It thus results the share of immigrants from c who should move to region r if they exactly followed the settlement patterns of their compatriots (Card 2001). The shift-share instrument has recently been criticized as deficient by Jaeger et al. (2018), who state that the exogeneity condition may be violated if early immigrant shares are correlated with unobserved local characteristics even if these do no influence current immigrant flows.

16 While some of the above-mentioned arguments would suggest clustering standard errors at the state level, the number of federal states in Germany is only 16, leaving us with too few clusters for reliable statistical inference (Angrist and Pischke 2009; Cameron and Miller 2015).

Table 2: OLS results.

	(1)	(2)	(3)	(4)	(5)
DV: AfD vote share	OLS	OLS	OLS	OLS	OLS
Share of foreigners	-0.372*** (0.040)	-0.350*** (0.034)	-0.333*** (0.052)	-0.253*** (0.028)	-0.099** (0.039)
Lagged AfD vote share	2.943*** (0.188)	2.798*** (0.169)	2.764*** (0.185)	2.352*** (0.182)	1.506*** (0.157)
Δ Asylum seekers		0.010*** (0.003)		0.008*** (0.002)	0.003* (0.001)
Share of asylum seekers			-0.591 (0.878)		
Unemployment rate		0.440*** (0.0611)	0.502*** (0.116)	-0.371*** (0.103)	0.461*** (0.091)
Voter turnout				-0.522*** (0.063)	-0.296*** (0.055)
NSDAP vote share 1933				-0.072*** (0.013)	-0.020* (0.010)
Share of females				-1.120*** (0.225)	-0.637*** (0.171)
Share of high school dropouts				0.103 (0.081)	-0.109* (0.059)
Share of Christians				-0.061*** (0.015)	-0.030 (0.024)
Share of married				0.014 (0.067)	0.242*** (0.060)

Table 2 (continued)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS
DV: AD vote share					
Share of youth				-0.237 (0.159)	-0.004 (0.141)
Rural area				0.335 (0.267)	0.335 (0.267)
Share of industry workers				0.037** (0.011)	-0.022** (0.010)
Use of broadband Internet					
Constant	3.375*** (0.929)	-0.121 (1.043)	1.980 (1.236)	109.7*** (12.82)	47.26*** (11.37)
Observations	401	401	401	399	399
Adj. R-squared	0.530	0.592	0.578	0.743	0.893
State FE	N	N	N	N	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Δ Asylum seekers measures the percentage increase in the district number of asylum seekers between 2014 and 2016. Unemployment rate is the average percentage share of registered unemployed individuals relative to the total civil working population in a district in 2016. Share of high school dropouts refers to the share of students in a district leaving high school without a secondary degree. Share of Christians includes individuals devoting to either Catholicism or Protestantism. Share of youth refers to the population share of 18- to 24-year-olds. Use of broadband Internet measures the share of district households with an internet speed of more than 50 mbit/s. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Considering column (1), the estimate for the share of foreigners implies a significantly negative relationship with AfD voting. A 1 percentage point increase in the share of foreigners is associated with a roughly 0.37 percentage point lower AfD vote share. The coefficient is negative and significant in all specifications. In the most sophisticated estimation in column (5), a 1 percentage point higher share of foreigners implies a 0.099 percentage point lower AfD vote share. Transferring this last result to the sample at hand, a 1 std.-dev. increase in the share of foreigners is associated with an 0.1 std.-dev. decrease in the AfD vote share (see appendix table B.1).

Strikingly, however, in districts with a larger percentage increase in the number of asylum seekers, electoral support for the AfD is higher. The effect is smaller compared to the share of foreigners, with a 1 std.-dev. increase in Δ Asylum seekers yielding a 0.037 std.-dev. increase in the AfD vote share (see appendix table B.1).

Moreover, AfD vote shares seem to increase with economic vulnerability, as measured by unemployment and the share of industry workers. Greater turnout is negatively related to AfD voting as are c. p. higher population shares of females, higher population shares of high school dropouts and higher historic vote shares for the NSDAP in 1933. For the latter two variables, however, coefficients are barely significant at the 10 percent level. Districts with a larger share of married people exhibit more AfD support. Whether a district is classified as rural does not seem to determine AfD voting. However, the use of broadband Internet as a comparable indicator of local infrastructural development is significantly and negatively associated with AfD support.

In order to account for potential spatial spillovers within clusters of geographically close districts, we re-estimate the OLS approach including spatially weighted values for AfD voting and explanatory variables. Results are reported in table 3 and only show estimates for the full specification including all covariates and state FE. All models control for the 2017 AfD vote share in other districts. Models (1) and (3) moreover include the percentage increase in the number of asylum seekers in other districts, while models (2) and (4) control for the unemployment rate in other districts. Models (1) and (2) employ a contiguity matrix of weights. Here, all districts $k \neq i$ bordering i are given a weight $\sigma_k > 0$, while non-adjacent districts receive a weight of $\sigma_k = 0$. In models (3) and (4) an inverse-distance matrix is used, assigning a weight to all districts $k \neq i$ which is proportional to the inverse distance of k to i .

Tackling the issue of spatial endogeneity, the impact of the share of foreigners is still significantly negative in all models. In addition, we find a significantly positive effect of a higher AfD vote share in other districts. This result basically suggests spatial spillovers or geographic concentration of AfD strongholds.

Table 3: Spatial G2SLS results.

DV: AfD vote share	(1)	(2)	(3)	(4)
	Spatial G2SLS	Spatial G2SLS	Spatial G2SLS	Spatial G2SLS
Share of foreigners	-0.083** (0.035)	-0.078** (0.035)	-0.098*** (0.038)	-0.099*** (0.037)
Lagged AfD vote share	1.345*** (0.157)	1.347*** (0.152)	1.512*** (0.148)	1.514*** (0.149)
AfD share, other districts	0.152*** (0.039)	0.187*** (0.042)	0.463*** (0.176)	0.310** (0.150)
Δ Asylum seekers				
Own district	0.002* (0.001)	0.002** (0.001)	0.002* (0.001)	0.002* (0.001)
Other districts	-0.010*** (0.003)		-0.030*** (0.010)	
Total average impact	-0.007* (0.037)		-0.008* (0.005)	
Unemployment rate				
Own district	0.426*** (0.085)	0.421*** (0.084)	0.472*** (0.086)	0.478*** (0.085)
Other districts		-0.314*** (0.082)		-0.426* (0.244)
Total average impact		0.184 (0.124)		0.383*** (0.114)
Constant	43.95*** (10.34)	37.77*** (10.73)	48.07*** (10.98)	47.73*** (11.06)
Observations	399	399	399	399
Pseudo R-squared	0.902	0.902	0.902	0.902
Socio-dem controls	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y
State FE	Y	Y	Y	Y
Weighting matrix	contiguity	contiguity	inv. distance	inv. distance

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Weighted averages of AfD vote shares and of Δ *Asylum seekers* in other districts are included in all models. Weighted averages of the unemployment rates are included in models (2) and (4). Total average effects refer to the combined average effects of the respective variables in both the district under observation and other districts. Models (1) and (2) use a contiguity matrix which assigns a weight of $\sigma_k > 0$ to all districts $k \neq i$ bordering district i . Models (3) and (4) employ inverse-distance weights with weights σ_k decreasing in the distance of k to i . Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator for rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

We calculate total average effects for the increase in the number of asylum seekers in columns (1) and (3). The respective estimate reports the mean total change in the AfD vote share in district i given a unit change in Δ Asylum seekers in both i and the respectively considered other districts $k \neq i$. Interestingly, increases in the number of asylum seekers in adjacent districts counterbalance the positive effect of respective increases in the district of observation itself, with total impacts being negative in models (1) and (3). A potential interpretation could be a NIMBY (“not in my backyard”) position of voters when it comes to asylum applicants (Bratti et al. 2020; Jasny and Becker 2020). Solidarity with people in need and the rejection of asylum restrictions is observable when refugees are present but do not enter the immediate environment of voters. It vanishes once refugees move into the same district, relying on the same public-good provision. This strengthens the supposition that AfD voting is not necessarily an expression of xenophobic sentiments but rather a form of criticism of political management or of fear of social exclusion.

This result also resembles that obtained by Bratti et al. (2020). Their spatial analysis serves a somewhat different purpose than ours, as they use spatial spillovers of refugee presence on neighboring municipalities without refugees in order to exploit exogenous variation in proximity to asylum seeker housing facilities. Nevertheless, they likewise find that anti-immigrant sentiment and dissatisfaction with the government increase with proximity to a asylum seeker housing facility (Bratti et al. 2020). The positive and significant total effect of unemployment in model (4) supports this interpretation in the sense that voters are rather uneasy about the general economic situation in the light of social changes, possibly holding the government accountable.

4.2 Alternative specifications

Addressing the issue of endogeneity, we re-estimate our baseline specifications, applying the above-presented IV strategy. Second-stage results are displayed in panel A of table 4. In column (1), the 1933 share of Jews is used as an instrument for the share of foreigners in 2016, whereas in column (2), the 1995 share of foreigners serves as an instrument.¹⁷

¹⁷ Intercepts and singleton dummy variables are *partialled out* in the 2SLS estimations in order to avoid multicollinearity issues. For instance, each district is located in one single federal state, meaning that when n state dummies are included, $n - 1$ are equal to 0 and only one is equal to 1 (*singleton dummy variables*). There is thus multicollinearity between the intercept and the singleton dummy variables. We thus partial out the respective variables, which implies subtract-

Table 4: Baseline IV results.

DV: AfD vote share	(1)	(2)
	2SLS	2SLS
<i>Panel A: Second stage</i>		
Share of foreigners	-0.564*** (0.213)	-0.121** (0.050)
Lagged AfD vote share	1.532*** (0.200)	1.507*** (0.152)
Δ Asylum seekers	0.004* (0.002)	0.003* (0.001)
Unemployment rate	0.412*** (0.112)	0.459*** (0.087)
Adj. R-squared	0.358	0.560
<i>Panel B: First stage</i>		
Share of Jews 1933	1.323*** (0.3707)	
Share of foreigners 1995		0.797*** (0.113)
Kleibergen-Paap F-stat	12.74	50.12
Observations	399	399
Socio-dem controls	Y	Y
Econ/geo controls	Y	Y
State FE	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Instrument in column (1): share of Jews 1933. Instrument in column (2): share of foreigners 1995. Intercepts and singleton dummy variables are partialled out in order to avoid multicollinearity issues. Regression coefficients for all other variables are the same as if intercepts and dummy variables had been included. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

The IV results qualitatively replicate the OLS results; effect size, however, varies. Considering the specification in column (1), a 1 percentage point increase in the share of foreigners implies a 0.56 percentage point decrease in the AfD vote

ing their impact from the estimation. At the same time, the regression coefficients for all other variables remain the same as if we had included the intercepts and singleton dummy variables. Reduced-form estimations for the IV specifications can be found in appendix table B.2.

share. Due to the above-mentioned similarity between shares of foreigners in 1995 and 2016, the effect size in column (2) is almost identical to that in the baseline OLS estimation. Here, a 1 percentage point increase in the share of foreigners is associated with a 0.12 percentage point decrease in AfD voting. The first-stage estimation in panel B of table 4 indicates a strong and significant impact of both instruments on the 2016 share of foreigners.

Having already argued that different groups of immigrants may inspire different reactions among the native population, we try to further examine the types of migrants driving the observed effects. To that end, we replace the overall share of foreigners in our IV estimation by distinct subgroups. Table 5 reports the results. Model (1) uses the share of asylum seekers as an alternative explanatory variable. In model (2), the total share of foreigners is replaced by the population share of immigrants who are non-asylum seekers. In model (3), we include the share of individuals with a migration background. Models (4) and (5) distinguish between the local population shares of EU and non-EU migrants, respectively.

Interestingly, the negative effect of immigration on AfD voting seems to be driven by immigrants who are non-asylum seekers and/or come from other EU countries. This seems plausible, since removing intercultural barriers may be easier for natives and immigrants from a similar background. Still, however, AfD voting increases with the number of immigrants who enter Germany as asylum seekers. Natives thus seem to distinguish between different types of immigrants when deciding on voting for an anti-immigrant option. This observation fits with our interpretation that the legal status of an immigrant, which determines whether they are forced to rely on public transfers, may shape anti-immigrant sentiment.

We provide other alternative specifications in the appendix. First, we repeat the estimation in table 5 using the two IV approaches. Results are reported in appendix tables B.5 and B.6. Second, we employ alternative control variables in appendix table B.7. Here, we replace the unemployment rate by district GDP per capita and disposable income per capita in order to test whether the results are sensitive to the chosen indicator of local economic strength. Likewise, we replace the share of high school dropouts by the share of employees without a professional degree and by the share of university graduates. Our main results remain qualitatively stable. Third, we repeat the full baseline OLS specification as well as the two full IV specifications, weighting districts by their 2016 population; see appendix table B.8. Again, the results are robust to these modifications.

4.3 Effect heterogeneity

The descriptive evidence presented in section 3.1 has already pointed to a potentially heterogeneous effect of immigration on AfD voting. Given the clearly evident

Table 5: OLS results: alternative explanatories.

DV: AfD vote share	(1)	(2)	(3)	(4)	(5)
	OLS	OLS	OLS	OLS	OLS
Share of asylum seekers	0.172*				
	(0.091)				
Share of non-asylum seekers		-0.115***			
		(0.040)			
Share of individuals w/ a migration background			-0.009		
			(0.035)		
Share of EU migrants				-0.173***	
				(0.054)	
Share of non-EU migrants					-0.058
					(0.071)
Lagged AfD vote share	1.499***	1.509***	1.498***	1.512***	1.499***
	(0.156)	(0.157)	(0.157)	(0.157)	(0.156)
Δ Asylum seekers		0.002	0.002*	0.002	0.002*
		(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate	0.478***	0.462***	0.467***	0.433***	0.478***
	(0.090)	(0.090)	(0.100)	(0.089)	(0.090)
Constant	34.46***	49.17***	36.65***	48.25***	38.04***
	(10.47)	(11.56)	(11.79)	(11.27)	(10.91)
Observations	399	399	399	399	399
Adj. R-squared	0.891	0.894	0.891	0.894	0.891
Socio-dem controls	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

structural difference in AfD support between Eastern and Western Germany, we test whether increases in the share of foreigners have distinct effects in these two parts of the country. Furthermore, we test effect heterogeneity for the increase in the number of asylum seekers as well as the unemployment rate. Results are reported in table 6.¹⁸

18 Results for a repetition employing the IV approach are provided in appendix table B.9.

Table 6: OLS results: effect heterogeneity.

DV: AfD vote share	(1)	(2)	(3)	(4)	(5)
	OLS	OLS	OLS	OLS	OLS
Share of foreigners	-0.105*** (0.040)	-0.099** (0.040)	-0.102*** (0.039)	-0.147** (0.064)	-0.113*** (0.043)
Share of foreigners × Eastern	-0.359** (0.154)				
Share of foreigners × Unemployment rate				0.007 (0.008)	
Lagged AfD vote share	1.473*** (0.155)	1.500*** (0.157)	1.503*** (0.157)	1.505*** (0.156)	1.512*** (0.158)
Δ Asylum seekers	0.002* (0.001)	0.002 (0.001)	0.003* (0.001)	0.003* (0.001)	0.001 (0.003)
Δ Asylum seekers × Eastern		0.003 (0.006)			
Δ Asylum seekers × Share of foreigners					0.0001 (0.0001)
Unemployment rate	0.455*** (0.091)	0.459*** (0.093)	0.474*** (0.097)	0.374*** (0.134)	0.465*** (0.092)
Unemployment rate × Eastern			-0.047 (0.163)		
Constant	48.00*** (11.33)	47.24*** (11.39)	47.11*** (11.46)	47.35*** (11.39)	47.87*** (11.40)
Observations	399	399	399	399	399
Adj. R-squared	0.895	0.893	0.893	0.893	0.893
Socio-dem controls	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

With regard to the share of foreigners, we find that the negative impact on AfD voting is stronger in Eastern Germany. In model (1), we observe a negative and significant effect of increasing foreigner shares on AfD voting in Western German districts; here, a 1 percentage point higher share of foreigners is associated with a 0.1 percentage point lower AfD vote share. By contrast, a similar increase in

Eastern Germany reduces AfD voting by a total of almost 0.5 percentage points.¹⁹ This may imply a familiarization effect of intercultural contact. In Western Germany, the average district foreigner share is 11.7 percent, which is almost three times as large as in Eastern Germany where it is 4.41 percent. Where immigration is traditionally low, more migrants may help to manifest a contact effect and reduce anti-immigrant sentiment. However, this effect may decline as shares of foreigners get larger. It is conceivable that natives get used to living with people from foreign origin so that additional immigration induces no further perception change. Moreover, in areas with particularly large communities of migrants, exchange with the native population may even decline at some point, as immigrants mainly cluster in all-migrant neighborhoods and have less contact to natives.

We also tested a potentially non-linear effect by including squared foreigner shares into the estimation.²⁰ In line with the descriptive evidence provided in figure 3, we do not find a non-linear impact in neither Eastern nor Western districts. The distinct effects in our case are thus driven by the structural break between Eastern and Western Germany as such, rather than by a quadratic relationship within either of these regions. Finally, there is no evidence that the effects of increases in the number of asylum seekers or the unemployment rate differ between Eastern and Western Germany in models (2) and (3) of table 6. Nor do we find evidence that the impact of the foreigner share on AfD voting varies across values of Δ Asylum seekers or the unemployment rate in models (4) and (5).

4.4 Plausibility analysis

Although we have already presented a number of tests, a skeptical reader may still ask whether the observed negative relationship between immigration and AfD voting is not simply a spurious one. This may be the case if both immigration and AfD voting are correlated with a third, unobserved factor. If this is true, we should observe a similarly negative relationship between AfD voting and the share of foreigners in 2013, when the party first competed in a federal election. Back at that time, the AfD's platform focused mainly on Euroskepticism and conservative economic policy. Voters with resentments against immigrants did not necessarily find the AfD a meaningful electoral option, not to mention that the period of mass immigration was still to come. We repeat the baseline OLS estimation for the year

¹⁹ The same result is also observable when using standardized variables to account for the potentially different distributions of foreigners in Western and Eastern Germany.

²⁰ The results are available on request.

2013, shifting back all variables to that point in time.²¹ Results are reported in table 7.

There does not seem to be any systematic relationship between AfD voting and immigration in 2013, neither in Eastern nor in Western German districts. Contrasting this evidence with our baseline results, we find further support for the conclusion that the perception of and exposure to immigration were decisive for voting AfD in 2017.²²

As a second test, we check the relationship between immigration and voting for parties other than the AfD in the 2017 election. Non-systematic relationships that do not align with the respective party's immigration policies may also indicate that there is no causal impact of immigration on voting but that correlations only appear by coincidence. Table 8 presents the results of the OLS estimation, replacing AfD vote shares with the electoral results of the respective other party. The first five models present the estimates for the other major parties in the German Bundestag, while model (6) examines voting for the NPD, a right-wing extremist party.²³

A systematic relationship between immigration and voting – in this case a positive one – is found only for the Greens (*Grüne*). This is in line with their immigration-friendly and open agenda. The incumbent CDU/CSU vote share is positively associated with the share of foreigners but the coefficient lacks statistical significance. Significances are observed, however, when repeating this plausibility check for the CDU/CSU by means of the IV approaches (see appendix tables B.10 and B.11). While German voters in districts with more immigration may have rejected the strict anti-immigrant policies suggested by the AfD, they nevertheless may have favored the conservative CDU/CSU's argument to accept refugees but to restructure the immigration process and to strongly encourage

21 Since there is no comparable increase in asylum applications immediately prior to the 2013 election, we replace the increase in the number of asylum seekers by the population share of asylum seekers at the beginning of 2013.

22 This test and the results are in line with Cantoni et al. (2019), who find a significant relationship between NSDAP voting during the Nazi era and AfD voting in 2017 but not in 2013.

23 Although the Federal Constitutional Court decided in 2017 that the NPD's platform is in evident conflict with the German constitution, it rejected a party ban request because the party is politically insignificant (Backes 2018; Molier and Rijpkema 2018). While the party list is up for election by the second vote in all federal states, the party obtains vote shares far below the necessary 5 percent, often less than 1 percent (see official election results on the webpage of the German Federal Returning Officer). The party openly represents a racist, anti-democratic and even violent platform (Backes 2018). Given the very low social and legal acceptability of the movement, we argue that voters are unlikely to switch to this party in order to express short-term electoral protest.

Table 7: Plausibility I: AfD vote shares 2013.

DV: AfD vote share	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	2SLS	2SLS	2SLS	2SLS
<i>Panel A: Second stage</i>						
Share of foreigners	0.014 (0.017)	0.012 (0.017)	-0.094 (0.078)	-0.092 (0.077)	0.013 (0.022)	0.010 (0.022)
Share of foreigners × Eastern		0.039 (0.033)		-0.023 (0.069)		0.038 (0.033)
Share of asylum seekers	-0.231 (0.192)	-0.213 (0.194)	0.133 (0.350)	0.120 (0.349)	-0.227 (0.191)	-0.206 (0.193)
Unemployment rate	0.030 (0.027)	0.028 (0.027)	0.025 (0.029)	0.027 (0.030)	0.030 (0.026)	0.028 (0.026)
Constant	-2.387 (3.917)	-2.243 (3.932)				
Adj. R-squared	0.666	0.666	0.090	0.084	0.198	0.200
<i>Panel B: First stage</i>						
Share of Jews 1933			1.157*** (0.378)	-0.252** (0.101)		
Share of Jews 1933 × Eastern				4.259*** (0.947)		
Share of foreigners 1995					0.896*** (0.053)	-0.040*** (0.013)
Share of foreigners 1995 × Eastern						0.885*** (0.062)
Kleibergen-Paap F-stat			9.37	4.78	288.96	149.05
Observations	395	395	395	395	395	395
Socio-dem controls	Y	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Instrument (model 3): share of Jews 1933. Instruments (model 4): share of Jews 1933, share of Jews 1933 × Eastern. Instrument (model 5): share of foreigners 1995. Instruments (model 6): share of foreigners 1995, share of Jews 1933 × Eastern. Intercepts and singleton dummy variables are partialled out in 2SLS estimations in order to avoid multicollinearity issues. Regression coefficients for all other variables are the same as if intercepts and dummy variables had been included. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table 8: Plausibility II: Other parties.

DV: AfD vote share	(1)	(2)	(3)	(4)	(5)	(6)
	CDU/CSU	SPD	FDP	Grüne	Linke	NPD
Share of foreigners	0.034 (0.032)	-0.004 (0.020)	-0.016 (0.016)	0.034** (0.016)	0.007 (0.017)	0.0002 (0.003)
Lagged vote share	0.668*** (0.020)	0.777*** (0.014)	1.377*** (0.125)	0.933*** (0.032)	0.706*** (0.073)	0.387*** (0.073)
Δ Asylum seekers	-0.001 (0.001)	-0.001** (0.0004)	-0.0002 (0.0004)	-0.0005 (0.0006)	0.0008 (0.0006)	0.0001 (0.0001)
Unemployment rate	-0.180*** (0.067)	0.006 (0.046)	-0.122*** (0.033)	-0.094*** (0.027)	-0.032 (0.040)	0.004 (0.013)
Constant	-14.86* (8.813)	5.359 (5.364)	16.83*** (4.597)	-5.651 (4.098)	-1.893 (5.270)	-0.287 (0.587)
Adj. R-squared	0.950	0.982	0.927	0.979	0.978	0.854
Observations	399	399	399	399	399	399
Socio-dem controls	Y	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Included are all parties, apart from the AfD, which entered the German parliament as a result of the 2017 federal election in models (1) to (5). Model (6) reports estimates for the extreme right-wing NPD. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

integration into the German society.²⁴ Apart from that, the positive impact could also capture the popularity of then-chancellor Angela Merkel and her politics.

Apart from that, another interesting finding concerns the negative and significant effect of an increase in the number of asylum seekers on the SPD vote share. Being one of the two governing parties at that time, the SPD was politically co-responsible for the opening towards asylum migration in 2014/15. The coefficient for the other governing party CDU/CSU in model (1) is likewise negative but insignificant. These results again support the notion that anti-immigrant attitudes (i) only focus on certain groups of immigrants and (ii) may be an expression of crit-

²⁴ Steinmayr (2021) observes a similar phenomenon in Austria, where contact to migrants led natives to switch from voting for the far-right to voting for the center-right.

icism toward the government in light of a local overburdening due to the refugee inflow.

5 Conclusion

We investigate the effect that local shares of foreigners have on electoral support for the AfD, the major anti-immigrant party in the 2017 German parliamentary election. In the wake of the latest migrant inflow that peaked in 2015, a total of almost one million people entered Germany seeking asylum and better living conditions. This has fueled public debate about migration policies and set the stage for the right-wing populist AfD. Visual inspection of AfD election results and the distribution of foreigners, however, suggests a negative relationship at the administrative district level. This would be in line with the contact theory according to which frequent interaction between natives and immigrants reduces prejudices and shapes a more welcoming attitude. Furthermore, we account for geographic clustering of political preferences and economic circumstances by means of a spatial regression model.

Indeed, we find that districts with a larger share of non-German residents exhibit lower support for the AfD. Interestingly, this effect is particularly strong in districts in Eastern Germany, where the AfD performed remarkably well. As population shares of foreigners are lower there for historic reasons, the larger impact may point to a familiarization effect of immigration at the intensive margin. Furthermore, we observe the impact to be driven by non-asylum seekers and EU migrants, hence, those who are culturally more similar to the native German population, which may facilitate exchange and integration.

Several sensitivity tests underpin the causality of the observed effects. In particular, we do not find immigration to be a significant determinant of AfD voting in the 2013 election, which took place prior to the refugee inflow. We address the issue of a potentially non-random immigrant distribution across Germany by applying an IV approach. We instrument the 2016 district share of foreigners by the 1933 district share of Jewish people and the 1995 district share of foreigners. The negative relationship between immigration and AfD voting remains qualitatively stable.

One main focus of our study is that we highlight different effects on voting behavior shaped by different groups of immigrants. While the relationship between the overall population share of foreigners and anti-immigrant voting is negative, AfD support increases along with the number of asylum seekers, a subgroup of migrants. Combining these results, we could interpret the electoral rejection of the

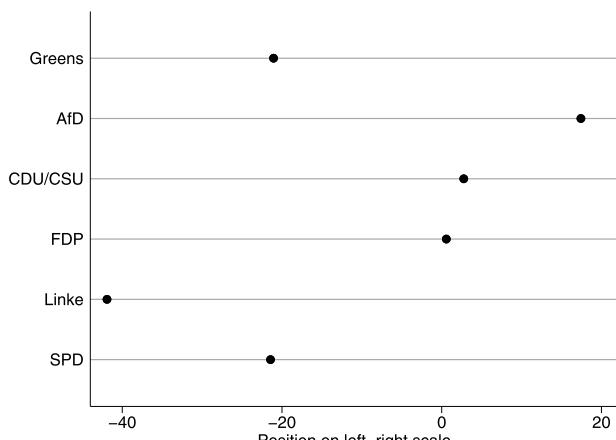
latest refugee inflow not as a sign of pure xenophobia but rather as the expression of discontent with the government's management of the issue. Moreover, the negative attitude toward immigration shocks illustrates fear of economic grievances caused by population growth. In that respect, we also find that AfD voting increases with higher unemployment rates as well as a poorer infrastructure equipment.

We make a vital contribution to the still-growing literature investigating the electoral consequences of the *European refugee crisis*. Germany is a particularly interesting case regarding the question at hand, not only due to its strongly burdened relationship to right-wing ideology but also due to its long history of immigration. Our observations suggest that the recent changes in the German political landscape may have their roots in concerns other than pure racism, such as fear of economic losses, which politics are generally able to address. In that sense, the refugee inflow may just have been a welcome opportunity to express a more fundamental discontent with politics and incumbents. Political action needs to be undertaken to avoid further, likely unwarranted, electoral rejection or real-world discrimination of migrants. Our results can represent a starting point for understanding voting patterns and giving suitable policy responses that address voters' concerns but protect the interests of immigrants.

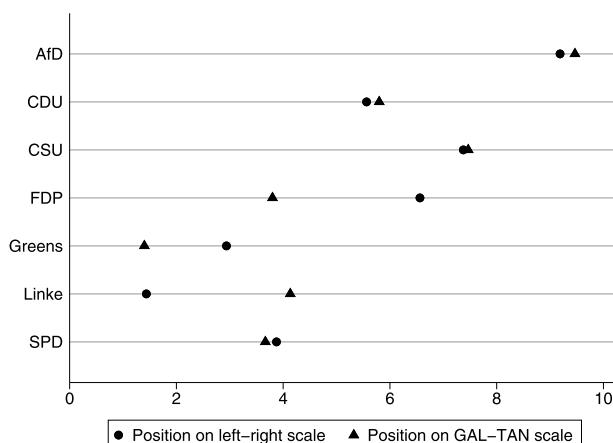
Our results leave open several avenues for further research. Given the fact that immigration may just have served as a scapegoat for deeper resentments toward the government, future studies could make use of similar events in order to investigate whether shocks in general provide an opportunity to voice political concern. We furthermore highlight the existence of spatial spillovers at the local level. As many countries were affected by both the refugee inflow and the rise of right-wing parties, more research potential lies in internationally comparable analyses, specifically accounting for spillovers between politically and culturally connected countries, such as the members of the European Union.

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Appendix A. Supplementary descriptives



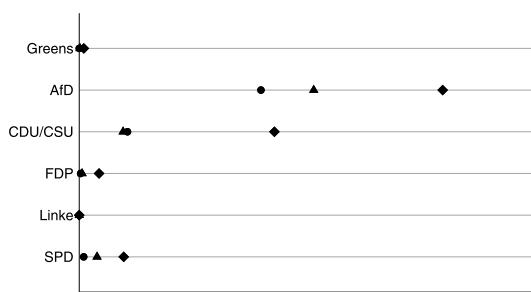
(a) Manifesto Data Project



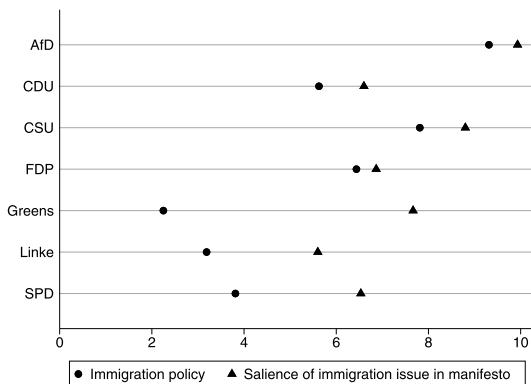
(b) Chapel Hill Expert Survey

Figure A.1: German parties on left-right scale.

Note: Values are taken from the Manifesto Data Project (Volkens et al. 2019) and the Chapel Hill Expert Survey (Bakker et al. 2019), respectively, and refer to the respective coding of parties on a general left-right scale. The lower end of values corresponds to an extreme left-wing attitude, while the upper end of values corresponds to an extreme right-wing attitude.



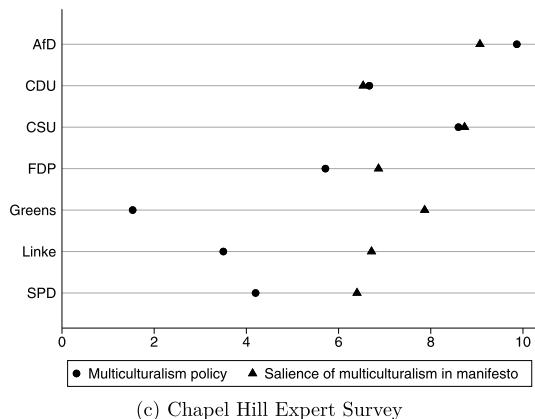
(a) Manifesto Data Project



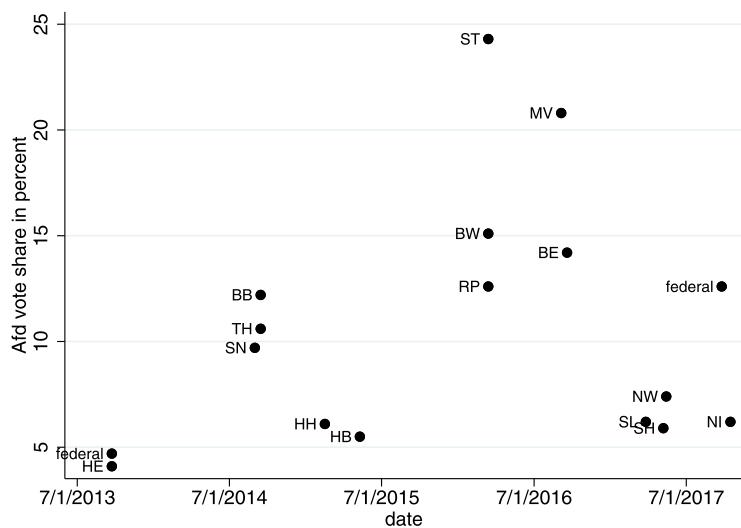
(b) Chapel Hill Expert Survey

Figure A.2: Issue positions of German parties.

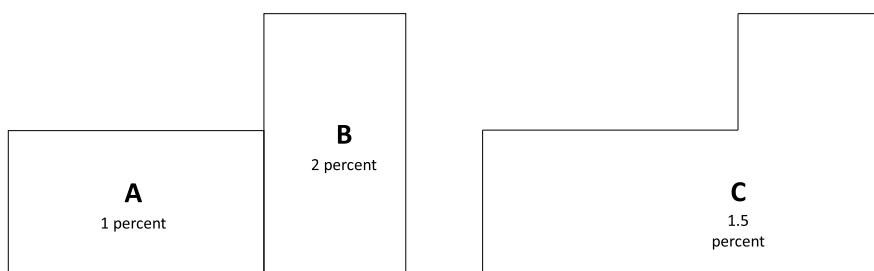
Notes: Variables displayed in panel (a) are taken from the Manifesto Data Project (Volkens et al. 2019). Higher values here correspond to a more restrictive attitude towards multiculturalism or immigration and a stronger promotion of the national way of life, respectively. Variables displayed in panels (b) and (c) are obtained from the Chapel Hill Expert Survey (Bakker et al. 2019). Higher values here correspond to more restrictive attitudes towards the indicated issue, or a larger salience of the indicated issue, respectively.



(c) Chapel Hill Expert Survey

Figure A.2: (continued)**Figure A.3:** AfD vote shares, 2013–2017.

Notes: Election results were obtained from the Federal Returning Officer and the State Statistical Offices. Abbreviations represent German federal states with vote shares referring to a respective state election. HE = Hesse, BB = Brandenburg, TH = Thuringia, SN = Saxony, HB = Bremen, HH = Hamburg, ST = Saxony-Anhalt, MV = Mecklenburg-Vorpommern, BW = Baden-Württemberg, BE = Berlin, RP = Rhineland-Palatinate, NW = North Rhine-Westphalia, SH = Schleswig-Holstein, SL = Saarland. The AfD did not compete in Bavaria in the given time period.

**Figure A.4:** District conversion scheme.**Table A.1:** Immigration to Germany, 2014–2016.

	2014	2015	2016
Total	1,464,724	2,136,954	1,865,122
Non-Germans	1,342,529	2,016,241	1,719,075
Asylum seekers	173,072	441,899	722,370
From Syria	64,952	326,872	155,412
From Afghanistan	12,567	94,902	70,011
EU migrants	809,807	846,036	796,552

Notes: All figures taken from the Migration Reports 2015, 2016 and 2017 by the Federal Office for Refugees and Migration (Federal Office for Migration and Refugees 2016, 2019a). Asylum seekers include first-time applicants only. The number of refugees entering Germany in 2015 was actually larger than indicated, where capacity constraints did not allow all new arrivers to directly file an asylum application. Authorities report a total of about 900,000 refugees in 2015. Figures may vary over reports due to corrections.

Table A.2: Correlation matrix.

Variables	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11
AfD vote share (v1)	1.000***										
Share of foreigners (v2)	-0.415***	1.000***									
Share of EU foreigners (v3)	-0.380***	0.910***	1.000***								
Share of non-EU foreigners (v4)	-0.381***	0.924***	0.683***	1.000***							
Share of ind. w/ a migration background (v5)	-0.497***	0.914***	0.812***	0.863***	1.000***						
Share of Jews 1933 (v6)	-0.197***	0.422***	0.339***	0.431***	0.398***	1.000***					
Share of foreigners 1995 (v7)	-0.437***	0.924***	0.833***	0.861***	0.917***	0.410***	1.000***				
Lagged AfD vote share (v8)	0.616***	-0.040	-0.015	-0.056	-0.141***	0.102**	-0.052	1.000***			
Share of asylum seekers 2016 (v9)	-0.249***	0.487***	0.200***	0.674***	0.439***	0.191***	0.363***	-0.115**	1.000***		
Δ Asylum seekers (v10)	0.240***	-0.204***	-0.252***	-0.127**	-0.240***	-0.168***	-0.258***	0.048	0.267***	1.000***	
Unemployment rate (v11)	0.266***	0.021	-0.174***	0.196***	-0.049	0.045	-0.009	0.110*	0.343***	-0.027	1.000***

Significance levels: *** p < 0.01, ** p < 0.05, * p < 0.1.

Appendix B. Additional regression results

Table B.1: OLS results: standardized variables.

	(1)	OLS
DV: AfD vote share		
Share of foreigners (std.)	-0.104** (0.0413)	
Lagged AfD vote share (std.)	0.307*** (0.0321)	
Δ Asylum seekers (std.)	0.0373* (0.0202)	
Unemployment rate (std.)	0.225*** (0.0442)	
Constant	-0.897*** (0.0740)	
Observations	399	
Adj. R-squared	0.893	
Socio-dem controls	Y	
Econ/geo controls	Y	
State FE	Y	

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Model (1) repeat the estimation from table 2, column (5) but with z-scores of the included variables. All metric variables have been standardized by subtracting the sample mean and dividing by the sample standard deviation. Categorical variables are unchanged. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.2: IV results: reduced form.

DV: AfD vote share	(1)	(2)
	OLS	OLS
Share of Jews 1933	-0.747*** (0.211)	
Share of foreigners 1995		-0.096** (0.043)
Lagged AfD vote share	1.470*** (0.156)	1.496*** (0.158)
Δ Asylum seekers	0.002* (0.001)	0.002* (0.001)
Unemployment rate	0.469*** (0.090)	0.479*** (0.090)
Constant	38.62*** (10.25)	42.55*** (11.11)
Observations	399	399
Adj. R-squared	0.893	0.892
Socio-dem controls	Y	Y
Econ/geo controls	Y	Y
State FE	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.3: Spatial IV results.

DV: AfD vote share	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	2SLS							
Share of foreigners	-0.132** (0.059)	-0.130** (0.058)	-0.247*** (0.066)	-0.255*** (0.067)	-0.104** (0.043)	-0.099** (0.042)	-0.144*** (0.042)	-0.147*** (0.042)
Lagged AfD vote share	1.359*** (0.159)	1.360*** (0.155)	1.520*** (0.157)	1.523*** (0.158)	1.351*** (0.158)	1.353*** (0.152)	1.515*** (0.150)	1.517*** (0.151)
AfD vote share, other districts	0.141*** (0.039)	0.176*** (0.043)	0.425** (0.178)	0.295* (0.151)	0.147*** (0.039)	0.182*** (0.042)	0.450** (0.176)	0.305** (0.150)
Δ Asylum seekers								
Own district	0.002* (0.001)	0.003** (0.001)	0.003* (0.002)	0.00299* (0.002)	0.002* (0.001)	0.002** (0.001)	0.003* (0.001)	0.003* (0.001)
Other districts	-0.009*** (0.003)		-0.026** (0.011)		-0.009*** (0.003)		-0.029*** (0.010)	
Total average impact	-0.006 (0.004)	-0.006 (0.005)	-0.006 (0.005)	-0.006* (0.004)	-0.006* (0.004)	-0.006* (0.004)	-0.007 (0.005)	-0.007 (0.005)
Unemployment rate								
Own district	0.423*** (0.085)	0.418*** (0.085)	0.457*** (0.090)	0.461*** (0.089)	0.425*** (0.085)	0.420*** (0.085)	0.468*** (0.086)	0.473*** (0.0854)
Other districts		-0.299*** (0.083)		-0.388 (0.240)		-0.307*** (0.082)		-0.414* (0.242)
Total average impact	0.195 (0.123)		0.376*** (0.115)		0.190 (0.123)		0.381*** (0.114)	
Constant	49.89*** (11.91)	44.29*** (12.11)	65.89*** (13.05)	66.48*** (13.15)	46.50*** (11.03)	40.42*** (11.27)	53.59*** (11.56)	53.50*** (11.63)

Table B.3 (continued)

DV: AfD vote share	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	2SLS															
Observations	399	399	399	399	399	399	399	399	399	399	399	399	399	399	399	399
Weighting matrix																
Socio-dem controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Weighted averages of AfD vote shares and of Δ Asylum seekers in other districts are included in all models. Weighted averages of unemployment rates in other districts are included in models (2), (4), (6) and (8). Total average effects refer to the combined average effects of the respective variables in both the district under observation and other districts. Models (1), (2), (5) and (6) use a contiguity matrix which assigns a weight of $\sigma_k > 0$ to all districts $k \neq i$ bordering district i . Models (3), (4), (7) and (8) employ inverse-distance weights with weights σ_k decreasing in the distance of k to i . Instrument in models (1) to (4): share of Jews 1933. Instrument in models (5) to (8): share of foreigners 1995. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator for rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.4: Spatial IV results: reduced form.

DV: AfD vote share	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	2SGLS							
Share of foreigners 1995	-0.727*** (0.177)	-0.758*** (0.175)	-0.752*** (0.210)	-0.721*** (0.206)	-0.092** (0.036)	-0.084** (0.035)	-0.095** (0.040)	-0.096** (0.040)
Lagged AfD vote share	1.318*** (0.157)	1.308*** (0.151)	1.476*** (0.147)	1.480*** (0.147)	1.333*** (0.157)	1.337*** (0.151)	1.503*** (0.149)	1.505*** (0.149)
AfD vote share, other districts	0.143 *** (0.039)	0.188*** (0.042)	0.507*** (0.180)	0.301* (0.155)	0.155*** (0.038)	0.189*** (0.042)	0.468*** (0.180)	0.312** (0.153)
Δ Asylum seekers								
Own district	0.002* (0.001)	0.002* (0.001)	0.002* (0.001)	0.002* (0.001)	0.002 (0.001)	0.002* (0.001)	0.002* (0.001)	0.002* (0.001)
Other districts	-0.007** (0.003)	-0.035*** (0.010)	-0.010*** (0.010)	-0.010*** (0.003)	-0.010*** (0.003)	-0.010*** (0.010)	-0.030*** (0.010)	-0.030*** (0.010)
Total average effects	-0.050 (0.189)	-0.14** (0.005)	-0.07* (0.004)	-0.07* (0.004)	-0.07* (0.004)	-0.07* (0.004)	-0.009* (0.005)	-0.009* (0.005)
Unemployment rate								
Own district	0.427*** (0.085)	0.422*** (0.084)	0.479*** (0.085)	0.485*** (0.084)	0.440*** (0.084)	0.434*** (0.084)	0.490*** (0.084)	0.496*** (0.084)
Other districts	-0.293*** (0.082)	-0.435* (0.258)	-0.435* (0.258)	-0.435* (0.258)	-0.310*** (0.082)	-0.310*** (0.082)	-0.431* (0.245)	-0.431* (0.245)
Total average effects	0.207 (0.126)	0.387*** (9.785)	0.387*** (9.785)	0.387*** (9.785)	0.205* (0.124)	0.205* (0.124)	0.402*** (10.33)	0.402*** (10.33)
Constant	37.18*** (9.276)	31.96*** (9.581)	39.57*** (9.785)	38.95*** (9.890)	40.85*** (10.06)	34.66*** (10.33)	43.46*** (10.64)	43.05*** (10.74)

Table B.4 (continued)

DV: AfD vote share	(1) 2SGLS	(2) 2SGLS	(3) 2SGLS	(4) 2SGLS	(5) 2SGLS	(6) 2SGLS	(7) 2SGLS	(8) 2SGLS
Observations	399	399	399	399	399	399	399	399
Weighting matrix	contiguity	contiguity	inv. distance	inv. distance	contiguity	contiguity	inv. distance	inv. distance
Socio-dem controls	Y	Y	Y	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Weighted averages of AfD vote shares and of Δ Asylum seekers in other districts are included in all models. Weighted averages of unemployment rates in other districts are included in models (2), (4), (6) and (8). Total average effects refer to the combined average effects of the respective variables in both the district under observation and other districts. Models (1), (2), (5) and (6) use a contiguity matrix which assigns a weight of $\sigma_k > 0$ to all districts $k \neq i$ bordering district i . Models (3), (4), (7) and (8) employ inverse-distance weights with weights σ_k decreasing in the distance of k to i . Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, employees w/o a professional degree, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator for rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.5: Alternative explanories: IV results I.

DV: AfD vote share	(1)	(2)	(3)	(4)
	2SLS	2SLS	2SLS	2SLS
<i>Panel A: Second stage</i>				
Share of non-asylum seekers	-0.611** (0.241)			
Share of ind. w/ a migration background		-0.320*** (0.108)		
Share of EU migrants			-2.263 (1.730)	
Share of non-EU migrants				-0.752*** (0.271)
Lagged AfD vote share	1.550*** (0.199)	1.432*** (0.202)	1.652*** (0.395)	1.492*** (0.181)
Δ Asylum seekers	0.001 (0.001)	0.003* (0.002)	-0.002 (0.004)	0.006* (0.003)
Unemployment rate	0.420*** (0.109)	0.328*** (0.114)	-0.0356 (0.429)	0.561*** (0.124)
Adj. R-squared	0.303	0.339	-1.515	0.354
<i>Panel B: First stage</i>				
Share of Jews 1933	1.222*** (0.353)	2.330*** (0.453)	0.330 (0.250)	0.993*** (0.238)
Kleibergen-Paap F-stat	11.99	26.48	1.737	17.39
Observations	399	399	399	399
Socio-dem controls	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y
State FE	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections only. Instrument: share of Jews 1933. Intercepts and singleton dummy variables are partialled out in order to avoid multicollinearity issues. Regression coefficients for all other variables are the same as if intercepts and dummy variables had been included. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.6: Alternative explanatories: IV results II.

DV: AfD vote share	(1)	(2)	(3)	(4)
	2SLS	2SLS	2SLS	2SLS
<i>Panel A: Second stage</i>				
Share of non-asylum seekers	-0.124** (0.052)			
Share of ind. w/ a migration background		-0.102** (0.043)		
Share of EU migrants			-0.226** (0.095)	
Share of non-EU migrants				-0.261** (0.110)
Lagged AfD vote share	1.510*** (0.151)	1.478*** (0.160)	1.515*** (0.152)	1.497*** (0.154)
Δ Asylum seekers	0.002* (0.001)	0.002* (0.001)	0.002 (0.001)	0.004** (0.002)
Unemployment rate	0.461*** (0.086)	0.426*** (0.089)	0.421*** (0.087)	0.502*** (0.094)
Adj. R-squared	0.527	0.499	0.528	0.502
<i>Panel B: First stage</i>				
Share of foreigners 1995	0.779*** (0.109)	0.943*** (0.153)	0.427*** (0.067)	0.369*** (0.057)
Kleibergen-Paap F-stat	50.73	37.87	41.07	42.44
Observations	399	399	399	399
Socio-dem controls	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y
State FE	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Instrument: share of foreigners 1995. Intercepts and singleton dummy variables are partialled out in order to avoid multicollinearity issues. Regression coefficients for all other variables are the same as if intercepts and dummy variables had been included. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.7: OLS results: alternative control variables.

DV: AfD vote share	(1)	(2)	(3)	(4)
	OLS	OLS	OLS	OLS
Share of foreigners	-0.097** (0.040)	-0.085** (0.039)	-0.095** (0.039)	-0.086** (0.039)
Lagged AfD vote share	1.509*** (0.167)	1.562*** (0.161)	1.540*** (0.157)	1.503*** (0.156)
Δ Asylum seekers	0.003** (0.001)	0.002* (0.001)	0.003** (0.001)	0.003** (0.001)
Unemployment rate			0.429*** (0.089)	0.408*** (0.086)
District GDP p. c.	-0.000009 (0.00001)			
Disp. income p. c.		-0.239*** (0.090)		
Share of employees w/o a professional degree			-0.069 (0.083)	
Share of university graduates				-0.165* (0.091)
Constant	59.24*** (11.02)	53.32*** (11.36)	48.98*** (11.80)	40.38*** (11.65)
Observations	399	399	399	399
Adj. R-squared	0.885	0.889	0.892	0.893
Socio-dem controls	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y
State FE	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections only. Control variables replacing *unemployment rate* in columns (1) and (2): *district GDP p. c.*, measuring the district GDP relative to population, and *disp. income p. c.*, measuring the after-state income relative to population. Control variables replacing *share of high school dropouts* in columns (3) and (4): *share of employees w/o a professional degree*, measuring the percentage of employees in a district who have neither a vocational nor an academic degree nor any other post-secondary degree, and *share of university graduates*, measuring the population share of persons having completed academic education. The remaining covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.8: OLS and IV results, population-weighted.

DV: AfD vote share	(1)	(2)	(3)
	OLS	2SLS	2SLS
<i>Panel A: Second stage</i>			
Share of foreigners	-0.125*** (0.0001)	-0.733*** (0.0006)	-0.158*** (0.0001)
Lagged AfD vote share	1.487*** (0.0004)	1.448*** (0.0005)	1.485*** (0.0004)
Δ Asylum seekers	0.001*** (0.000004)	0.0004*** (0.000009)	0.002*** (0.000005)
Unemployment rate	0.571*** (0.0002)	0.527*** (0.0003)	0.569*** (0.0002)
Constant	35.31*** (0.025)		
Adj. R-squared	0.921	0.294	0.614
<i>Panel B: First stage</i>			
Share of Jews 1933		0.884*** (0.0007)	
Share of foreigners 1995			0.709*** (0.0002)
Observations	82,058,076	82,058,076	82,058,076
Socio-dem controls	Y	Y	Y
Econ/geo controls	Y	Y	Y
State FE	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections only. Instrument in column (2): share of Jews 1933. Instrument in column (3): share of foreigners 1995. Intercepts and singleton dummy variables are partialled out in 2SLS estimations in order to avoid multicollinearity issues. Regression coefficients for all other variables are the same as if intercepts and dummy variables had been included. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.9: Effect heterogeneity: IV results.

DV: Ad vote share	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS	(7) 2SLS	(8) 2SLS
<i>Panel A: Second stage</i>								
Share of foreigners	-0.548*** (0.202)	-0.169*** (0.060)	-0.559*** (0.212)	-0.123** (0.050)	-0.662** (0.281)	-0.127*** (0.049)	-0.557*** (0.210)	-0.121** (0.053)
Share of foreigners × Eastern	-0.819** (0.410)	-0.551*** (0.327)						
Lagged Ad vote share	1.457*** (0.188)	1.459*** (0.151)	1.527*** (0.198)	1.501*** (0.151)	1.509*** (0.206)	1.503*** (0.151)	1.525*** (0.198)	1.507*** (0.152)
Δ Asylum seekers	0.004 (0.002)	0.003* (0.001)	0.004 (0.003)	0.002 (0.001)	0.005* (0.003)	0.003* (0.001)	0.006 (0.005)	0.003 (0.003)
Δ Asylum seekers × Eastern			0.003 (0.007)	0.003 (0.005)				
Δ Asylum seekers × Share of foreigners							-0.0001 (0.0004)	-0.00004 (0.0002)
Unemployment rate	0.401*** (0.109)	0.445*** (0.088)	0.411*** (0.113)	0.457*** (0.089)	0.527*** (0.139)	0.476*** (0.093)	0.406*** (0.114)	0.458*** (0.089)
Unemployment rate × Eastern					-0.459 (0.286)	-0.066 (0.155)		
Adj. R-squared	0.325	0.527	0.310	0.524	0.216	0.523	0.293	0.523

Table B.9 (continued)

DV: AfD vote share	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS	(7) 2SLS	(8) 2SLS
<i>Panel B: First stage</i>								
Share of Jews 1933	-0.225*** (0.074)		1.322*** (0.371)		1.140*** (0.372)		-1321.53** (541.856)	
Share of Jews 1933 × Eastern		3.144*** (0.564)						
Share of Jews 1933 × Δ Asylum seekers						13.426*** (5.000)		
Share of foreigners 1995		0.797*** (0.113)		0.799*** (0.113)		0.791*** (0.119)		-99.907*** (29.821)
Share of foreigners 1995 × Eastern		-0.151 (0.227)						
Share of foreigners 1995 × Δ Asylum seekers							1.756*** (0.270)	
Kleibergen-Paap F-stat	6.33	10.38	12.74	49.57	9.39	44.19	5.92	22.27
Observations	399	399	399	399	399	399	399	399
Socio-dem controls	Y	Y	Y	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Instrument in columns (1), (3), (5), (7): share of Jews 1933. Instrument in columns (2), (4), (6) (8): share of foreigners 1995. Intercepts and singleton dummy variables are partialled out in order to avoid multicollinearity issues. Regression coefficients for all other variables are the same as if intercepts and dummy variables had been included. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.10: Other parties: IV results I.

DV: Vote share	(1)	(2)	(3)	(4)	(5)	(6)
	CDU	SPD	FDP	Grüne	Linke	NPD
<i>Panel A: Second stage</i>						
Share of foreigners	0.303** (0.127)	0.016 (0.074)	-0.378*** (0.146)	-0.116 (0.097)	0.313*** (0.098)	0.010 (0.009)
Lagged vote share	0.656*** (0.022)	0.779*** (0.014)	1.730*** (0.160)	0.975*** (0.055)	0.867*** (0.098)	0.393*** (0.071)
Δ Asylum seekers	-0.002 (0.002)	-0.001** (0.0005)	0.001 (0.001)	-0.0004 (0.0005)	-0.0005 (0.0009)	0.00007 (0.0001)
Unemployment rate	-0.169** (0.081)	0.010 (0.045)	-0.093 (0.064)	-0.106*** (0.034)	-0.026 (0.056)	0.004 (0.012)
Adj. R-squared	0.873	0.928	0.460	0.914	0.645	0.522
<i>Panel B: First stage</i>						
Share of Jews 1933	1.602*** (0.381)	1.547*** (0.381)	1.138*** (0.360)	1.169*** (0.373)	1.558*** (0.374)	1.349*** (0.367)
Kleibergen-Paap F-stat	17.68	16.45	10.00	9.82	17.36	13.52
Observations	399	399	399	399	399	399
Socio-dem controls	Y	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Instrument: share of Jews 1933. Intercepts and singleton dummy variables are partialled out in order to avoid multicollinearity issues. Regression coefficients for all other variables are the same as if intercepts and dummy variables had been included. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B.11: Other parties: IV results II.

DV: Vote share	(1)	(2)	(3)	(4)	(5)	(6)
	CDU	SPD	FDP	Grüne	Linke	NPD
<i>Panel A: Second stage</i>						
Share of foreigners	0.061*	-0.024	-0.037	0.051***	0.016	-0.0005
	(0.035)	(0.026)	(0.023)	(0.017)	(0.022)	(0.004)
Lagged vote share	0.666***	0.776***	1.398***	0.929***	0.711***	0.387***
	(0.020)	(0.013)	(0.052)	(0.031)	(0.071)	(0.068)
Δ Asylum seekers	-0.001	-0.001**	-0.0001	-0.001	0.001	0.0001
	(0.001)	(0.0004)	(0.0003)	(0.0006)	(0.0005)	(0.0001)
Unemployment rate	-0.179***	0.006	-0.120***	-0.093***	-0.032	0.004
	(0.065)	(0.044)	(0.032)	(0.026)	(0.038)	(0.012)
Adj. R-squared	0.898	0.928	0.801	0.942	0.845	0.532
<i>Panel B: First stage</i>						
Share of foreigners 1995	0.802***	0.797***	0.755***	0.798***	0.772***	0.794***
	(0.114)	(0.112)	(0.111)	(0.114)	(0.111)	(0.112)
Kleibergen-Paap F-stat	49.64	50.33	46.15	48.83	48.76	50.03
Observations	399	399	399	399	399	399
Socio-dem controls	Y	Y	Y	Y	Y	Y
Econ/geo controls	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y

Notes: Level of analysis: administrative districts. Vote shares refer only to the second votes (*Zweitstimmen*) in German federal elections. Instrument: share of foreigners 1995. Intercepts and singleton dummy variables are partialled out in order to avoid multicollinearity issues. Regression coefficients for all other variables are the same as if intercepts and dummy variables had been included. Covariates are included in groups. The group of *socio-dem controls* comprises the district population share of females, high school dropouts, married individuals, Christians and youths (18- to 24-year-olds) as well as the voter turnout rate in the 2017 election and the imputed 1933 NSDAP vote share. The group of *econ/geo controls* comprises the share of industry workers, an indicator of rural area and the share of households with broadband Internet. Standard errors are robust to heteroskedasticity at the district level and reported in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

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