# Can Television Reduce Xenophobia? The Case of East Germany<sup>\*</sup>

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May 19, 2021

#### Abstract

Can television have a mitigating effect on xenophobia? To examine this question, we exploit the fact that individuals in some areas of East Germany – due to their geographic location – could not receive West German television until 1989. Following intergroup contact theory, we conjecture that individuals who received West German television were more frequently exposed to foreigners and thus have developed less xenophobia. We show that regions that could receive West German television were less likely to vote for extreme right parties during the national elections from 1990 to 2017 and exhibited fewer criminal offenses against refugees. In addition, a higher number of naturalizations was approved by government officers. By analyzing survey data, we find that people from these areas have on average, more positive attitudes towards refugees and are more likely to support them, for instance, by donating money.

Keywords: Mass media; Television; Xenophobia; East Germany; Natural experiment

JEL classification: D72, L82, P30

<sup>&</sup>lt;sup>\*</sup>We are grateful to David Schindler, Luigi Zingales, and participants of the 33<sup>rd</sup> Annual Congress of the EEA, the 21<sup>st</sup> Applied Economics Meeting, the 2018 Annual Conference of the VfS, the 20<sup>th</sup> INFER Annual Conference, the CESifo Area Conference on Applied Microeconomics, the 2019 Meeting of the EPCS, the 24<sup>th</sup> Annual Meeting of the SOLE, the Diginomics Seminar in Bremen, and the 2020 Meeting of the AEA for helpful comments.

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# 1 Introduction

At least since the beginning of the European migrant crisis in 2015, the party landscape in Europe has been changing. Parties with anti-migration attitudes are increasingly finding their ways into the parliaments of many European countries. This tendency is reflected, for example, in the electoral successes of the *National Rally* in France, the *Sweden Democrats*, Salvinis' *Lega* in Italy or *Fidesz* in Hungary. The majority of these political parties use xenophobic rhetoric and support xenophobic attitudes (Jolly and DiGiusto, 2014). In addition, in Germany, for the first time since the end of World War II, a party, the *Alternative for Germany*, has established itself nationwide on the right edge of the political spectrum. Since these parties, along with their attitudes, are supported by a large part of society, it is essential for researchers and policymakers to understand the mechanisms that contribute to the emergence of and the adherence to xenophobic attitudes.

In this article, we address the following question: Can television have a mitigating influence on xenophobia? To do so, we exploit a natural experiment that took place in the German Democratic Republic (GDR) in the period of the German division. Although West German television (WGTV) reception was generally widespread in the GDR, some areas were located too far away from the WGTV transmitter to enable the reception of these programs. This is the exogenous variation that we exploit in our study. Furthermore, we utilize the fact that West German channels exposed their audience more frequently to foreigners and foreign countries than did East German channels. In line with recent expansions of the intergroup contact theory, we conjecture that indirect contact with foreigners reduces racial as well as ethnic prejudice and hence xenophobia.<sup>1</sup> Several studies indicate that also indirect contacts, for example, via television, can mitigate negative attitudes towards members of other groups (Schiappa et al., 2005, Ortiz and Harwood, 2007, Dovidio et al., 2011). Consequently, the exposure to WGTV might have reduced the xenophobia of East Germans since a lack of exposure to foreigners is frequently seen as a source of xenophobia.<sup>2</sup>

In this paper, we use various outcomes to measure xenophobia, which is defined as a negative attitude towards foreigners in general. Among other things, this negative attitude becomes visible in a democratic system through votes for parties that have negative attitudes as such incorporated into their party program, in particular extreme right or general right-wing parties. Although right-wing attitudes are not identical with negative attitudes towards foreigners, the extreme right-wing political agenda is strongly correlated with negative attitudes towards foreigners (Frindte et al., 2016, Hyll and Schneider, 2018). Using the election results of right-wing parties in the eight federal elections from 1990 to 2017, we provide evidence that WGTV had a mitigating effect on xenophobia. What is more, the exposure to these programs affected the number of arson attacks against refugee housing and the number of incidents related to anti-refugee demonstrations neg-

atively. Furthermore, we find that a higher number of naturalizations was approved in these regions. By analyzing survey data from the German Socio-Economic Panel Study (SOEP) we can show that WGTV exposure positively affected Germans' attitudes towards refugees. In contrast to other studies analyzing the effect of WGTV with the SOEP data, we use a new subsample of the SOEP, introduced in 2018. This allows us to use selfreported information on WGTV consumption. To the best of our knowledge, we are the first to use this new subsample for this purpose. Overall, our findings provide evidence that media can have surprisingly broad effects that are generally seen as beneficial for society.

Previous academic literature has already identified the effects of television consumption on political attitudes. In an early article, Gentzkow and Shapiro (2004) find evidence that attitudes towards the United States in Muslim countries are correlated with television consumption. Gentzkow (2006) reveals that the introduction of television broadcasting in the United States correlates with a reduced consumption of newspapers and radio as well as a decline in political knowledge. DellaVigna and Kaplan (2007) investigate the effect of Fox News on election outcomes in the United States. They show that the Republican party gained support in regions where Fox News entered the cable market. Furthermore, DellaVigna et al. (2014) show that nationalistic Serbian radio broadcasting triggered hatred towards Serbs in Croatia. They provide further evidence that the election outcome for extremist parties is higher in regions that receive Serbian radio. Enikolopov et al. (2011) provide evidence that access to independent television stations in Russia reduced the election outcome for the government party and increased the votes for the opposition party. Olken (2009) analyzes the effect of television and radio exposure on social capital in Indonesia and documents that increased television consumption is correlated with lower self-reported trust and with less participation in social organizations. Finally, Adena et al. (2015) find that the Nazi regime successfully used radio broadcasting to increase the number of members of the Nazi party before their seizure of power.

The majority of these articles, however, focuses mainly on the political impact of news content. In light of this, Durante et al. (2019) find evidence that light entertainment programs can also shape the political attitudes of individuals. They analyze the consequences of the staggered introduction of Berlusconi's commercial television network in Italy and show that regions with earlier access to these television programs exhibited higher voting outcomes for Berlusconi's party *Forza Italia*. The literature investigating the effect of mass media consumption on voting outcomes leads us to the conjecture that media might also reduce xenophobia and, thus, the election results for right-wing parties. Like others before us (e.g. Crabtree et al. (2015), Hennighausen (2015), Bursztyn and Cantoni (2016)), we use the exogenous variation in the geographic features of East Germany that provided differential access to WGTV as identification strategy in our empirical analyses.

Over the last decade, economists and political scientists have used the historical division of East and West Germany as a natural experiment to explain, for example, policy preferences for state intervention and redistribution (Alesina and Fuchs-Schündeln, 2007), cheating behavior (Ariely et al., 2019), and individuals' attitudes towards social trust, risk, perceived fairness and cooperativeness (Heineck and Suessmuth, 2013). More recently, scholars have also exploited the variation in the availability of WGTV within the GDR. In a first article, Kern and Hainmueller (2009) investigate whether WGTV broadcasting undermined the authoritarian regime of the GDR. Using a survey that was conducted by the Central Institute for Youth Research (*Zentralinstitut für Jugendforschung*), they find that WGTV increased the life satisfaction of East Germans, who seemed to perceive television broadcasting mostly as a source of personal entertainment. In line with this finding, Hyll and Schneider (2013) find evidence that WGTV exposure is positively correlated with material aspirations, which were previously shown to be associated with happiness and personal well-being (Easterlin, 2001).

Hennighausen (2015) has recently demonstrated that WGTV exposure affected East Germans' beliefs about what drives success in life. Using data from the German Socio-Economic Panel, she finds a long-lasting effect that WGTV exposure made East Germans believe that effort rather than luck is a crucial determinant of success in life. Crabtree et al. (2015) investigate whether WGTV exposure prompted protest events in 1989, which ultimately led to the collapse of the GDR. Their study finds no evidence that exposure to West German broadcasting had an effect on protest events. Furthermore, Bursztyn and Cantoni (2016) find that WGTV exposure affected the composition of consumption after the German reunification, with East Germans who were exposed to WGTV buying more products that were advertised with a higher intensity. Slavtchev and Wyrwich (2017) analyze the influence of WGTV on entrepreneurial decisions of individuals and report that entrepreneurship is higher among residents of East German regions with former WGTV reception. Finally, the paper by Friehe et al. (2020) is particularly relevant for our study, as they investigate the effect of WGTV on voting behavior. To be precise, they focus on the election results of far-right and left-wing parties in a period from 1990 to 1998. In doing so, they find a negative correlation between television reception and the electoral success of these parties.

The remainder of the paper is structured as follows. Section 2 briefly outlines the history of divided Germany, the role of East and WGTV, as well as the role foreigners have played in the respective broadcasting programs. Subsequently, in Section 3, we discuss xenophobia and the nationalist parties in Germany. While we present our hypotheses, data, empirical results, and robustness tests in Section 4, we consider the effects of WGTV on other manifestations of xenophobic tendencies in Section 5. The final section provides the conclusion.

# 2 The Impact of WGTV on East German Election Outcomes

### 2.1 A brief history of the divided Germany

After World War II, in 1945, the former German Reich was occupied by Allied forces who divided the country into four occupation zones led by the United States, Great Britain, France, and the Soviet Union. The Soviet occupation zone consisted of the Eastern parts, besides the city of Berlin that was divided between all four occupation powers, so that the Western zones of Berlin became an "island" within the Soviet occupation zone. A larger part of the Soviet occupation zone became Polish territory, some part became territory of the Soviet Union itself. In 1949, the remainder formed the "German Democratic Republic" (East Germany), while the parts of Germany occupied by the US, Great Britain and, France formed the "Federal Republic of Germany" (West Germany), see Figure 1.

#### Figure 1 around here

With the political and economic support from the US and the other Western countries, West Germany quickly developed into a market economy and free democracy. East Germany became a communist state with a one-party rule, strict censorship of all media and was under supervision of the Soviet Union. In 1953, an uprising occurred in East Germany, which the Soviet Union suppressed militarily. Since more and more people fled the GDR, its border control increasingly tightened, leading to the construction of a fortified wall along the entire border between the GDR and West Germany (including West Berlin) in 1961 – the "Berlin Wall". After the onset of political reforms in the Soviet Union in the late 1980s, demonstrations for political freedom begun in many Eastern European countries, including the GDR. They succeeded at the end of 1989, which led to the fall of the Berlin Wall (November 9, 1989), democratic elections in East Germany (March 18, 1990), and ultimately to the reunification of Germany (October 3, 1990).

## 2.2 The role of WGTV in East Germany

For citizens of the GDR, gathering independent information of the world outside of East Germany was challenging. Traveling to the West was practically impossible except in very special cases and even traveling to other "socialist countries" was restricted. Towards the end of the GDR, only one country accepted visitors without visas – former Czechoslovakia. Furthermore, the government of the GDR imposed tight control on all media. Books and newspapers from the West were not allowed to enter the country, which was strictly enforced with detailed border controls so that their impact on the flow of information was indeed insubstantial (Kuschel, 2016, p. 144 and p. 266). Since the Internet did not exist yet for the general public, the only means to obtain information from the West was through radio and television – both crossing the border easily via airwaves. WGTV, in particular, was considered to be the only "window to the West" by many East Germans (see, e.g., Hömberg (2002), p. 12) and simply more informative and attractive than the East German television programs (Wolff, 2002, p. 123). It has even been argued that WGTV was one of the main causes for "preserving the cultural unity of the German nation during the 45 years of separation" (Wolle, 1998).

While initially, the government of the GDR tried to enforce a ban on watching WGTV, this turned out to be too difficult in the long run. In the 1970s, the majority of East Germans were already following West German programs and in 1987, 85 % of the population were using West German radio or television regularly (Förster, 1995). In fact, in the 1970s and 1980s, the only limitation for watching WGTV was physics, that is the limited reach of television signals. Close to the border, watching WGTV programs was easily possible, but as the distance to aerial masts increased, this would become more and more difficult or even impossible. Since the programs were also broadcasted from West Berlin, the "island" in the middle of the GDR, most parts of the GDR had a good or at least reasonable WGTV reception. There were, however, differences in quality and two parts of the GDR, the North Eastern and South Eastern parts, were not able to receive WGTV signals at all. Due to their relative lack of information, these regions were made fun of by East Germans. Particularly, the South-Eastern region that included the third largest East German city, Dresden, was nicknamed "the valley of the clueless" (*Tal der Ahnungslosen*), see Figure 2.

Figure 2 around here

#### 2.3 Foreigners on East and WGTV

The difference between West and East German television was not restricted to politics and ideology. While in West Germany, the audience was expecting to see the world on their television screens – with reports from other countries, travel reports, foreign movies, or documentaries – East German television programs broadcasted much less foreign content, but more domestic programs (Stiehler, 1999). The type of foreign programs differed as well. Traveling reports were fewer in East Germany – comprehensible, given that traveling was restricted – and political reports from other countries tended to contain more political propaganda than general information (Bönisch and Hyll, 2015, Kuschel, 2016, Oehmig, 2017).

In sum, WGTV frequently exposed its audience to foreign countries and generally to foreigners from Europe, America, but also from all around the world. The size of this discrepancy can be inferred by comparing the program of the two main public television stations in the West (ARD and ZDF)<sup>3</sup> with the two East German television stations (DDR1 and DDR2). To quantify this difference, we analyzed the television program of three arbitrary weeks in the years 1980, 1985, and 1988. While the two main public television stations in West Germany broadcasted 36 programs with foreign content out of 141 (25.53 %) in the respective week in 1980, we only found 20 out of 138 (14.49 %) on the two main East German stations. Only five out of these 20 productions originated from non-Eastern Bloc countries.<sup>4</sup> In 1985, we find an even more pronounced difference with a share of foreign broadcastings of 32.19 % in West Germany and a share of 17.98 % in East Germany. In 1988, we find an almost equal portion in West (19.74 %) and East Germany (20.15 %). The share of productions from non-Eastern Bloc countries, however, was again much lower (7.46 %). The difference between the West and East Germany, which contained a higher portion of foreign content and exhibited in the late eighties already substantial rating figures (Müller, 1990).

The content of the broadcastings obviously differed markedly. While foreign content in East German television could include watching a Soviet union propaganda movie or a report about the visit of a GDR politician in a "friendly socialist country", in the West, this part of the program was much more diverse.<sup>5</sup> For instance, on Sunday, August 16, 1981, the program of the ZDF included broadcastings about the US, Italy, Africa, Russia and Slovakia, starting at noon with the "Sunday Concert" from New Orleans, followed by a report about "Our neighbors, the Italians", and later in the evening even including a documentary about movies and cinemas in sub-Saharan Africa. All in all, nine broadcastings had foreign content. On the same day, both EGTV stations together only had three (Hörzu, 1981). As can be seen from this example, the amount of exposure to foreign countries and foreign people on WGTV was large and diverse.

Given the differences in exposure to WGTV in the GDR, depending on the geographic location, this provides us with an ideal set-up to study the long-term effects of exposure to foreigners on television on the attitudes towards foreigners in general.

# 3 Xenophobia and nationalist parties in Germany

### 3.1 Xenophobia in East and West Germany

Like in most countries, there is a certain number of people with xenophobic tendencies in Germany. While before reunification this problem was frequently discussed publicly in

West Germany and, especially given Germany's history, a lot of political and educational efforts were made to reduce xenophobia, the problem was officially non-existent in East Germany. The communist state was considered by definition to be "anti-fascist." Practically, however, xenophobia was a built-in feature in the GDR: "the German Democratic Republic was a [...] system where foreignness didn't have space" (Klier, 1994). In fact, very few foreigners were allowed to live – usually temporarily – in the GDR and their rights were highly restricted. Exchange students from African countries, for example, were only allowed to eat out in *one* designated restaurant of their city of residence; female workers from Vietnam and Mozambique, who became pregnant during their stay in the GDR, were forced to have an abortion and were generally not permitted to marry Germans (Klier, 1994). Due to these manifold restrictions, the already smaller number of foreigners, around 1 % of the GDR population in 1989, was much less integrated and therefore much less visible than in West Germany. This situation also gave rise to xenophobia in the East and consequently, hostility as well as violence against foreigners was reported (Klier, 1994). Of course, this was officially concealed and thus, not well-known among the contemporary population – neither in the East nor in the West.

In West Germany, the situation for foreigners differed significantly. A large influx of foreigners into West Germany occurred, particularly in the 1960s and 1970s. Furthermore, interactions with the occupying foreign armies were closer, an important difference especially in the first years after the war, and later there was also a larger number of foreign tourists and exchange students.<sup>6</sup> This meant that contact with was a real-life experience for West German people. Even though contact was at first often restricted to culinary adventures into Yugoslavian, Italian, Greek, Turkish or Chinese restaurants, in the long run, most West Germans had personal contacts with foreigners and particularly larger cities became international. According to data by the Federal Statistical Office of Germany, in 1989, 8 % of the West German population were foreigners, not counting immigrants with German citizenship. Indeed, surveys show that the number of contacts between West Germans and foreigners was even in 1994, four years after the reunification, much larger than the number of contacts between East Germans and foreigners (Schmidt and Weick, 1998), see Figure 3.

#### Figure 3 around here

Although the relationship with foreigners and their situation was substantially better in West Germany than in the East, some degree of xenophobia existed in the West as well, with political parties profiting from it. Their success, however, was limited to regional elections and was only moderate. At nation-wide elections, they never won more than 4.3 % of the votes, which corresponds to the election result election outcome of the National Party of Germany in the federal election in 1969 (The Federal Returning Officer, 2019). With the reunification, the situation changed dramatically, particularly in East Germany. The economic breakdown during the transition into a market economy led to a sudden rise in unemployment rates up to 20 % on average. At the same time, more foreigners started to migrate to East Germany, especially since refugees and asylum seekers started to be distributed to the eastern parts of the country as well. High unemployment and the immigration of foreigners led to violence against foreigners and a moderate success of right-wing parties.<sup>7</sup> Although the situation improved considerably in the mid-1990s, it has deteriorated again since 2015 as the number of refugees has risen sharply.

## 3.2 Right-wing parties in Germany

The political spectrum in Germany is usually reflected by a number of parties. In the aftermath of elections, some of these parties will collaborate to form a government. This multi-party system is possible because seats are allocated according to vote shares. Parties that do not reach 5 % of the votes are excluded from this distribution. This usually leads to two-, sometimes three-party coalitions. It also means that extreme opinions are more likely to be reflected by extreme parties, different from the US, where they are usually integrated into one of the two major parties.

The most notable right-wing parties in Germany were the "National Party of Germany" (*Nationaldemokratische Partei Deutschlands*, NPD) that had some success in the 1960s and then again from the 1990s onward, the "The Republicans" (*Die Republikaner*, REP) that had the most success in the early 1990s, and the "German People's Union" (*Deutsche Volksunion*, DVU), most successful from the 1990s until they joined the NPD in 2011. While the Republicans can be seen as a right-wing populist party, the DVU and NPD are radical right-wing parties, even including neo-Nazis in their ranks.

In 2013, a new party, the "Alternative for Germany" (*Alternative für Deutschland*, AfD), appeared on the stage and started as a moderate Euro-critical movement. Later, the AfD heavily criticized immigration, particularly with campaigns aimed at the Eastern part of Germany, where it already had moderate success in the 2013 elections. In the 2017 election, the AfD was able to reach over 30 % in some electoral districts in East Germany. In our study, we also consider the AfD as a right-wing party.

### 3.3 Xenophobia versus general dissatisfaction

If those East Germans that received WGTV were indeed less xenophobic, we would consider them to also vote for right-wing parties less frequently. Nevertheless, it is crucial to disentangle xenophobic tendencies from another motivation to vote for these parties – anger towards the current political system. There is, however, another alternative for such voters to show their disagreement with current policies and the state of Germany as such: the communist party. While in West Germany, communist parties had never been successful, this changed after the reunification. The former East German communist party that had ruled the GDR under the name "Socialist Unity Party of Germany" (*Sozialistische Einheitspartei Deutschlands*, SED) survived the reunification, changed names twice (first to *Partei des Demokratischen Sozialismus*, PDS and then to *Die Linke*) and managed to have some moderate success in West Germany. In East Germany, however, its success was much larger, entering regional governments several times and in 2014, even winning a governor position in Thuringia.

Xenophobia should not motivate people to vote for *Die Linke*, but to vote for rightwing parties. General dissatisfaction with "those politicians" or the German democratic system should lead to a success of both, radical left and radical right.<sup>8</sup> Thus, voting results will enable us to distinguish both motivations to some extent.

# 4 WGTV and election outcomes

# 4.1 Hypotheses

Since the original formulation of the intergroup contact hypothesis by Allport (1954), many studies have examined the effects of intergroup contacts on attitudes towards members of other groups. Although most of these studies focused on forms of direct contact, more recent studies have also examined the role of indirect contacts (e.g., Dovidio et al., 2011, Pettigrew et al., 2011, Ioannou et al., 2018). In this regard, Pettigrew et al. (2007) find, for example, that both direct and indirect contacts have a negative impact on prejudices against foreigners and Muslims living in Germany. Schiappa et al. (2005) and Ortiz and Harwood (2007) provide evidence that exposure to televised gay-straight interactions reduces homophobic attitudes. By analyzing exposure to White-Black interactions, Lienemann and Stopp (2013) show that indirect contacts via media can also improve attitudes of Whites towards Blacks and interracial relationships. In a similar study, Joyce and Harwood (2014) documented comparable results with respect to the attitudes towards undocumented migrants in the US.

In line with these studies and our findings in Section 2.3, we expect people who received WGTV programs and were thus exposed more frequently to foreigners, to have developed less xenophobia than people who were not exposed to these television programs. We, therefore, hypothesize that people from counties that did receive WGTV programs should have voted less frequently for right-wing parties. **Hypothesis:** Reception of WGTV programs in the former GDR leads to a lower voting outcome for right-wing parties.

We consider the election outcomes for right-wing parties to be an appropriate method to measure xenophobic attitudes because, for one thing, people can state their preference anonymously and, for another, people should be incentivized to state their real preferences in an election.

An alternative explanation of such an election outcome could be that WGTV broadcasting conveyed a more realistic picture of the West German system. People in East Germany could have had different expectations about the new system they were confronted with in the early 1990s. Those East Germans that received WGTV were consequently less disappointed with the system that replaced the former GDR. If disappointment with the new political system was the primary motivation behind the election results, one would, again, expect East Germans that did not receive WGTV programs to have voted not only for the right-wing parties, but also for the PDS/Die Linke, as explained in Section 3.3. Therefore, we will test for this effect as well.

Other factors resulting from the pre- and post-communist area have been suggested to influence voting behavior today. First, there is ample empirical evidence that regions with largely unskilled individuals that suffer from unemployment and low income are associated with anti-immigration preferences (Scheve and Slaughter, 2001, Mayda, 2006, Faccini and Mayda, 2009).<sup>9</sup> In contrast, according to intergroup contact theory, regular encounters with foreigners who are visiting the region as tourists or on business trips, and might potentially also strengthen the local economy, should lead to a reduction in xenophobia.Mocan and Raschke (2016), for example, find evidence that higher encounters with foreigners reduce racist feelings. A reduction of xenophobia should consequently lead to a lower election turnout for right-wing parties. This is in line with previous research that has shown that a higher GDP per capita improves attitudes towards immigrants (Brenner and Fertig, 2006) and that welfare concerns are a more significant driver of attitudes towards foreigners than labor market concerns (Dustmann and Preston, 2007).

However, not every contact with foreigners will reduce xenophobia. We have already pointed out in Section 3.1 that in the former GDR, contact with foreigners was often restricted and lacked the chance for personal and, thus, positive experiences. After reunification, many new foreigners who arrived in the East were refugees, living in large refugee accommodations. Again, contacts were rare, this time due to language and cultural barriers (Schmidt and Weick, 1998). Instead, their arrival increased concerns about the already difficult job market situation. This has been discussed early already (Stone, 1990). The threat of unemployment might trigger xenophobia under low skilled workers. The encounter of unemployed foreigners might make the lack of jobs and the burden to the welfare state obvious to average citizens. Thus, while the intergroup contact theory suggests that having contact with foreigners reduces xenophobia, we are skeptical whether the forms of encounter that were typical in East Germany result in such an outcome.

Furthermore, there is empirical evidence that certain cultural traits are persistent over long periods of time (Voigtländer and Voth, 2015, Mocan and Raschke, 2016). Using data about antisemitism in Germany, Voigtländer and Voth (2012) show that medieval pogroms predict violence against Jews in the 1920s and election outcomes for Hitler's National Socialist German Workers' Party (*Nationalsozialistische Deutsche Arbeiterpartei*, NSDAP) – both several centuries later. They find such persistence to be lower in areas that had a high level of immigration and trade. Nevertheless, it seems possible that certain regions might have a long-term preference for extreme right-wing parties. Counties that had voted for the NSDAP in the 1920s and 1930s might also be more inclined to vote for the AfD, DVU, NPD, or the Republicans during the elections after the reunification.

Finally, we also consider that cities might be per se more cosmopolitan and openminded. Voters from a more densely populated region should thus suffer less strongly from xenophobia.

#### 4.2 Identification strategy

In 1989, the GDR was divided into 14 districts and 217 counties.<sup>10</sup> We make use of the fact that the population of some of those counties could previously receive WGTV. We consider all counties which were able to receive these programs to be part of the treatment area. Consequently, our control area consists of all counties without access to WGTV. In order to investigate the impact of watching WGTV on voting behavior, three assumptions have to be fulfilled.

Firstly, the inhabitants in the treatment and control area were comparable and varied only in the access to WGTV. This assumption seems to be reasonable, because the GDR was a totalitarian socialist system that focused especially on the equalization of regional differences. These efforts already started in the early childhood education with a centralized education system (Hyll and Schneider, 2013). In this regard, Bursztyn and Cantoni (2016) analyzed whether the inhabitants of the districts of Dresden, Neubrandenburg and Rostock, which constitute large parts of our control area, were comparable to the other districts in the GDR in terms of demographic and economic conditions. They do not find any significant difference between both areas regarding the population density, retail sales, savings per capita, or the share of workers employed in industry or agriculture. Their results are in line with the findings of Kern and Hainmueller (2009), who show that the district of Dresden was comparable to the other districts in the GDR. We extend the approach of Bursztyn and Cantoni (2016) and focus especially on the percentage of foreigners, the share of foreign visitors, and on further demographic figures. The data is obtained from several issues of the GDR Statistical yearbook. Table 1 shows that both areas do not differ significantly from each other for the first recorded year in 1955 and the last year in 1989. Unfortunately, some data is only documented in the latest period.

#### Table 1 around here

Furthermore, if there had been any differences in the voting behavior before the treatment, this would potentially invalidate our analysis. We, therefore, analyze the results of the *Reichstag* elections in 1928, 1930 and 1933 for the constituencies that later became part of the GDR area. Table 2 shows the vote shares for the main parties and the turnout. The "Dresden-Bautzen" constituency coincides geographically with the later GDR district of Dresden, which for the most part had no WGTV reception (Kern and Hainmueller, 2009, Hyll and Schneider, 2013). In addition, parts of the Pomerania constituency had no reception as well. However, only a very small part of this constituency later became part of the GDR, and the significantly larger part was placed under Polish administration. Also, areas of the constituency of "Frankfurt (Oder)" later became part of Poland. Overall, there are no systematic differences in the voting behavior of the individual constituencies. Hennighausen (2015) and Friehe et al. (2020) also came to this conclusion.

#### Table 2 around here

The data of the *Reichstag* elections, unfortunately, only allows an analysis at a rather high level of regional aggregation. This is why we are also looking at the state elections in 1946 during the Soviet occupation. These election results are available at county level. We focus on the state elections of the two states where our control areas are located, namely Mecklenburg-West Pomerania and Saxony. We compare for both states whether the vote shares for the three major parties "Socialist Unity Party of Germany" (Sozialistische Einheitspartei Deutschlands, SED), "Christian Democratic Union of Germany" (Christlich-Demokratische Union Deutschlands, CDU), and "Liberal Democratic Party of Germany" (Liberal-Demokratische Partei Deutschlands, LDP) differ between the treatment and the control areas. Table 3 shows the results of this comparison. Having done so, we find no significant differences in the vote shares. These findings are in line with Kern and Hainmueller (2009), who report that the vote shares of these three parties in the district of Dresden were similar to those of the other districts. It is important to note, however, that the 1946 elections were influenced by the aftermath of World War II and were not entirely independent. The Soviet Military Administration in Germany tried to influence the election in favor of the SED (Creuzberger, 1999).

#### Table 3 around here

The second important aspect for our analysis is that the individuals that had access to WGTV due to their geographical location were not only able to receive it but actually watched it. Given that approximately 98 % of the households in East Germany had a television set by 1989 (Müller, 2000), citizens from the GDR could in principle easily consume WGTV if the signal was strong enough. In addition, the black and white television reception was easily possible after the change of the GDR television to the West European system in the 1960s. Most of the modern color television sets produced in the GDR were provided with a Phase Alternating Line (PAL) color encoding system, which was also used in WGTV sets. Furthermore, a subsequent extension to the PAL system was easily possible for older television sets (Bundeszentrale für politische Bildung, 2012). Against this backdrop, we can rule out that technical differences hindered access to WGTV programs. Furthermore, we already highlighted in Section 2.2 the important role of WGTV in the everyday life of East Germans. Nevertheless, we will also use recent data on actual WGTV consumption in the GDR to check for the effect directly (see Section 5.2).

Third, we have to consider internal migration between the treatment and the control areas. In the time before reunification, residential and labor mobility was extremely restricted due to East Germany's centrally planned economy. In addition, the mobility across regions was further limited because the GDR faced a large shortage of housing since its foundation in 1949 (Kern and Hainmueller, 2009, Hyll and Schneider, 2013, Bursztyn and Cantoni, 2016). Therefore, selective spatial sorting during the GDR period should not be an issue for our identification strategy. Nevertheless, selective migration after reunification would also be an issue in our research design. In this regard, Bursztyn and Cantoni (2016) show that the migration rates to West Germany were similar for both groups. Furthermore, they provide evidence that the migration rates between the treatment and the control regions were relatively low in the years after reunification. Moreover, these migration rates do not show any asymmetric pattern.

## 4.3 Data

The data for the over-the-air signal strength was retrieved from Crabtree et al. (2015). In their paper, a Longley-Rice electromagnetic signal propagation model, terrain data as well as data on the location and technical characteristics of WGTV transmitters are used to model signal strength. They discretize the continuous measure of WGTV signal strength and generate four different categories: -86.5 dBm, -85 dBm, -82.5 dBm, and -80 dBm. Following Crabtree et al. (2015), we use a dummy variable for the reception of WGTV on a county level. The dummy variable equals one if the signal strength is above -86.5 dBm. In the online appendix, we show that our results do not change if we use one

of the other signal strengths. Figure 4 shows the treatment and control area.

#### Figure 4 around here

County level data for the national elections of the German Federal Parliament (Bundestag) were retrieved from the Federal Returning Officer (Bundeswahlleiter) for the elections from 1990 to 2017.<sup>11</sup> As there were various right-wing parties running for the elections, we consolidated the votes for the AfD, DVU, NPD, and REP under the label "Right Parties". In addition to our variable of interest, we consider a range of control variables. First, to account for differences in the voting behavior of the urban and rural population, we include the logarithmized population density of the respective counties for each election year. The data was retrieved from the electoral management body and the regional statistical offices (*Statistische Landesämter*). Furthermore, we include a dummy variable that equals one if the respective county is an urban county and zero otherwise. We also control for the share of women since several studies suggest that males are more prone to xenophobic attitudes (e.g. Watts, 1996). We also adjust for the average age and the total net migration. In addition, we consider the percentage of school-leavers with a university entrance certificate and the percentage of school-leavers without graduation. The information about the percentage of women, the average age, the total net migration as well as the information about school-leavers were retrieved from BBSR Bonn (2020). To account for the historical voting heritage of the counties, we consider the votes for the National Socialist Freedom Movement (Nationalsozialistische Freiheitspartei, NSFB) in the German federal election (Reichstagswahl) on May 4, 1924 in the respective county.<sup>12</sup> The data was retrieved from www.wahlen-in-deutschland.de and was available for the historical electoral districts, which we subsequently matched to the current counties.

Furthermore, we consider GDP per capita, the average disposable income, and the unemployment rate of the respective counties for each election year as well as the percentage of unemployed foreigners in the years. Only in 1990 and 1994 is the unemployment rate for foreigners not available. Once again, the data stems from the regional statistical offices. We also consider the percentage of foreigners living in the county. For the year 1989, the data is available on district level (*DDR Bezirke*) and comes from the last Statistical Yearbook of the former GDR. For the respective election years, it was collected from regional statistical offices. To account for potential contact with foreigners visiting the relevant county during the year of the election, we also consider foreign visitors for the respective election year. The data was again retrieved from regional statistical offices. A definition of all variables is provided in Table A.1 in the appendix.

In addition, it is also important to test whether the covariates in the regions with and without former WGTV reception are comparable. Because potential differences between regions might increase over time after reunification, the differences should be most pronounced in 2017. Therefore, Table 4 reports the covariate balance for 2017. While the counties in the treatment and control region are generally rather similar, we find significant differences in the share of women and the economic conditions. While we find a clearer difference in the unemployment rate, the income difference is rather negligible from an economic perspective. The monthly income in the treated counties is 60 euros higher compared to the counties in the control areas, which corresponds to 3.9 % of the average monthly income. Similar results are also documented in the study of Friehe et al. (2020).

## 4.4 Descriptive statistics

Regarding election results, right-wing parties have generally been on the rise in East Germany. While these parties received merely 1.6 % of the votes in 1990, their share of voters increased to almost 9 % in 2013 and even to 24 % in 2017. Except for the election in 2017, relative to the left-wing party PDS, which was later renamed Die Linke, right-wing parties were less popular.

With an average of 20 %, the unemployment rate during the 1990s was generally high in East Germany. The situation has strongly improved over the last decade and the unemployment rate averaged at half as many people as in the 1990s. In the election year 2017, the unemployment rate of foreigners was more than three times higher. By contrast, the rate of foreigners living in the respective regions was generally low, with the exception of Berlin, where on average 16 % of the population owned a foreign passport. The number of foreigners visiting East Germany has steadily been increasing, with by far the most people visiting Berlin and the fewest the city of Artern in Thuringia. Table 5 provides descriptive statistics of our variables.

#### Table 5 around here

#### 4.5 Main results

To test whether the exposure to WGTV leads to a lower percentage of votes for right-wing parties, we employ a random-effects model with the following regression equation:

$$RV_{it} = \beta_0 + \beta_1 T V_i + \beta_2 X_{it} + \mu_t + Z_i + \epsilon_{it}, \tag{1}$$

where  $RV_{it}$  represents the voting outcome for right-wing parties in county *i* in the federal election in year *t*. Arguably, the random effects estimator is the only estimator that allows us to identify non-time varying factors such as television reception.  $TV_i$  takes the value

of one if county *i* had access to WGTV prior to the reunification. As a consequence,  $\beta_1$  is our coefficient of interest. While  $X_{it}$  denotes a vector of covariates for county *i* at time *t*, we indicate year dummies by  $\mu_t$ .  $Z_i$  represents the county-specific random effect, i.e. the difference between the average voting outcome in county *i* and the average voting outcome in all of East Germany, while  $\epsilon_{it}$  indicates the error term. Table 6 reports the results for the election years from 1994 to 2017. In Table A.2 in the appendix, we show the results including the election in 1990. However, once we include the election in 1990, we can only use a reduced set of controls. Therefore, the specification used in Model 4 in Table 6 is our preferred one. In Section 4.6, we also look at all election years, including 1990, separately. All results in Section 4.5 and 4.6 hold even if we use the reduced set of controls and consider all election years, including 1990.

#### Table 6 around here

While in Model 1 we only include the TV-dummy, in Model 2 we also consider demographic characteristics of the respective counties. In Model 3, we add further controls to account for different economic conditions and in the fourth model, we include the voting outcome of the NSFB in 1924. In all models, we find that the exposure to WGTV during the GDR period had a negative and significant effect on election outcomes for right-wing parties, which is in line with the hypothesis stated above. Furthermore, we find that the percentage of foreigners living in the respective region had a significant and negative effect on election outcomes, which is also consistent with the intergroup contact theory. Similarly, the number of foreign visitors reduced the election outcome for right-wing parties. In contrast to these findings, the percentage of foreigners living in the former GDR had a positive and significant effect on the election results for right-wing parties. This result is contrary to the intergroup contact theory and might be due to the way foreigners were officially treated and perceived in the former GDR. The regressions further show positive results for population density and GDP per capita and negative results for the share of women.

Moreover, we consider the average relevant lifetime that the counties' inhabitants spent in the former GDR as another control variable, because there could exist differences in exposure time to the treatment across counties. Relevant years refer only to years spent in the former GDR after the 14th birthday, as we assume the influence on children to be small. Inhabitants that were 15 years old at the time of the fall of the Berlin Wall would enter the calculation of the GDRT with a value of one year. To make a comparison between the individual counties possible, we subtract the overall average number of relevant years in a given year from the average of each county. Model 5 includes an interaction term between the television reception and the average relevant lifetime of a counties' inhabitants spent in the former GDR.

#### 4.6 Robustness

In contrast to our approach, Kern and Hainmueller (2009) and Kern (2011) classify counties into treatment and control areas based on historical maps and apply a slightly different classification. If we apply their classification, our results remain unchanged. Moreover, if we use a cutoff level of -80.0 dBm, -82.5 dBm, or -85.0 dBm instead of -86.5 dBm for constructing our TV-dummy, our results still remain the same. The regression tables and further details are reported in the online appendix.

To investigate whether general dissatisfaction with the political system rather than xenophobia drives our results, we analyze the effect of our TV-dummy on other potential forms of expressing political dissatisfaction in an election. For this purpose, we replace the voting outcome for right-wing parties in Model 1 (cf. Table 7) with the voting outcome for the left-wing party as dependent variable. However, we find no significant relationship between prior WGTV exposure and the election outcome for the left-wing party. If general dissatisfaction with the political system had been the main motivation behind the election results for the right-wing parties rather than xenophobia, we would have expected to obtain a statistically significant and negative effect of the TV-dummy on the vote shares of the left party as well. Following Weber (2011), abstention can be treated as an alternative expression of protest. Therefore, in Model 2 in Table 7 we run the same model with the voter turnout as dependent variable. Again, the television reception has no significant effect.<sup>13</sup>

#### Table 7 around here

In our previous estimations, we have always added the votes of all right-wing parties. However, the AfD may have a special role. The AfD has positioned itself with its topics as hostile to refugees and immigration, but there could also be voters who may have chosen the AfD, for example, because of their critical attitude towards the European Union. In order to show that our results are not dependent on the AfD vote share, we re-estimate our main regression without the AfD votes. As shown in the online appendix, even without taking the votes of the AfD into account, we find a significant and negative effect of the TV-dummy.

To ensure that the effect of the TV-dummy pertains to both regions of the former GDR without access to WGTV, the industrialized southeastern and the agrarian northeastern part, we replicated our analysis for regional subsamples. Therefore, we split our sample in north and south. The panel estimations, displayed in the online appendix, show that the effect of the TV-dummy is present for the northern and the southern parts.

Nevertheless, the signal strength in a given county is affected by its location and its topography, for example, when the county is surrounded by mountains. There are a num-

ber of county characteristics that can be correlated with the geography and topography of the county. We are already controlling for aspects such as population density or economic growth.<sup>14</sup> In addition, the distance to the border could be correlated with unobservable characteristics, which may explain the rise of far-right parties after reunification. To ensure that our TV-dummy is not actually a geographic measure for a close proximity to the closest border, we implement a dummy variable that equals one if the respective county is located in an electoral district which is situated next to the border to Poland or to the Czech Republic. Considering the aforementioned points, the results do not change. As an alternative approach to address this issue, we calculate the geodesic between the administrative center of each county and its closest border and use the distance as a further explanatory variable in our panel model. Again our results regarding the election outcomes for right-wing parties remain unchanged, as shown in Table 8. In Table 8 (columns 3 and 4), we also control for the distance to the former inner-German border.

#### Table 8 around here

The signal strength in a given county is affected by local conditions such as the elevation. Since the over-the-air signal is not restricted to county borders, it could be that spillover effects exist in the counties in the vicinity to the border between our treatment and control areas (Kern, 2011). Therefore, small areas within counties that generally had no access to WGTV were perhaps able to receive these programs. Conversely, there might also be small areas within counties that generally had access that were unable to watch WGTV, because they were, for example, located in a valley. To reduce possible spillover effects between these two groups, at first we exclude all counties of our treatment area that are located next to the control area and run the same regression again. This concerns 18 counties. As a result, our treatment area now consists of 174 counties and the control area of 25. By doing so, our previous results remain unchanged. In a second step, we also exclude the counties of our control area that are situated next to the treatment area. This concerns 14 counties. As a result, our treatment area now consists of 174 counties and the control area of 11. Figure 5 illustrates our approach. Again, as shown in Table 9, the results for our panel estimation do not change.

#### Figure 5 and Table 9 around here

Since East Berlin was the capital of the former GDR and its demographic composition was very different from the other regions, we consider it necessary to exclude East Berlin from our sample as a further robustness check. In doing so, none of our previous results change.

One question that has yet to be answered is how long the effects of WGTV will last. Arguable, one might expect that preferences between East and West Germans converge gradually after reunification. Alesina and Fuchs-Schündeln (2007), for example, find that East and West Germans' preferences for state intervention converge after two generations. The fact that voters who were born after reunification were only entitled to vote in the more recent federal elections should contribute to such a convergence. By contrast, other studies have shown that once cultural traits and attitudes are formed, they can persist over an extremely long period (Voigtländer and Voth, 2012, Guiso et al., 2016, Mocan and Raschke, 2016). Hennighausen (2015) and Giuliano and Spilimbergo (2013) argue that convictions or moral values which evolved over decades can be long-lasting. By analyzing the influence of WGTV on entrepreneurship, Slavtchev and Wyrwich (2017) also report long-lasting effects, which they describe as being due to an inter-generational transmission of the television effect. In addition, the attitudes of people who grew up watching Western television might to be more persistent. For example, Voigtländer and Voth (2015) find that Germans who grew up under the Nazi regime show stronger anti-Semitic attitudes today than people who were born before or after this period. Overall, it is unclear whether the WGTV effect will disappear after reunification or whether it will persist.

To investigate this question, we analyze each federal election since 1990 separately, using OLS regressions. The results, which are reported in Table 9a and 9b, show that the TV-dummy remains negative and statistically significant for all periods. These results suggest that the WGTV effect is rather persistent. It is also noticeable that the coefficient of the TV-dummy has increased substantially, particularly in the last two election years. However, this result at least partly stems from the fact that the average election result also increased from 3.7 % in 2009 to 23.9 % in 2017 due to the presence of the AfD.<sup>15</sup>

Table 9a and 9b around here

# 5 Other measures for xenophobia

## 5.1 Regional dataset

While election results provide an excellent measure for individual preferences – they are by definition incentivized and include a large part of the population – one might argue that the motives for electing extreme right parties are not directly observable and might be different from xenophobia. In this subsection, we, therefore, apply additional measures for xenophobic attitudes. For this purpose, we use data on attacks targeting refugees provided by the Amadeu Antonio Foundation and the non-profit organization PRO ASYL.<sup>16</sup>

Between January 2015 and the end of December 2018, they documented 5222 incidents for East Germany (including Berlin) and categorized them into the following four groups: arson (120), battery (1305), other assaults (e.g. property damage to refugee accommodations, intimidation etc.) (3510) and incidents related to anti-refugee demonstrations (287). In addition, they classified 287 further incidents as suspected cases. The online appendix contains a list of examples for each type of anti-refugee activity. All incidents are geo-coded with exact longitude and latitude, which we use to assign them to the respective county. Although the geo-code was missing in 23 cases, we managed to allocate the incidents to the respective county by hand via the statement of the location. The dataset also contains a description and the source for each entry (e.g. police reports or inquires by political parties etc.). According to our hypothesis, we would expect to find fewer incidents in counties with former WGTV exposure. Results from random-effects poisson regressions are shown in Table 10, where we report incident rate ratios. In addition to the control variables that we used in the previous estimations, we also adjust for the number of refugees registered in each county. Since we could not obtain our control variables for the year 2018, we take the information from 2017.

#### Table 10 around here

Our results reveal a negative and statistically significant relationship between former WGTV exposure and the number of arson attacks and the number of incidents related to anti-refugee demonstrations, which is in line with our hypothesis. To ensure that the treatment effect on demonstrations is not only driven by the "Patriotic Europeans Against the Islamicisation of the Occident" (*Patriotische Europäer gegen die Islamisierung des Abendlandes*, Pegida) movement in Dresden, which organized weekly Monday demonstrations since their inception in October 2014, we excluded Dresden as a further robustness test. By doing so, none of our results change. However, in the case of battery, we also obtain a negative coefficient and a p-value of 0.147. In contrast, we do not find an effect of our TV-dummy on the number of other assaults. Results from probit estimations support our findings and can be found in the online appendix.

As a further robustness test, we use county data on naturalization per capita and naturalization per foreigners in the years 2015 to 2017. The data is obtained from BBSR Bonn (2020). The results are reported in Table 11. In these regressions, we also include the geodesic line between the counties' center and the closest border as an additional control since this geographic characteristic might be correlated with naturalization. In both models, we find that former exposure to WGTV had a positive and significant effect on naturalization. Whereas the previous robustness checks presented different methods of measuring xenophobic attitudes, the results presented in Table 11 can also be interpreted as a consequence of xenophobic attitudes. It might be the case that foreigners self-select themselves into counties or regions which seem to be more open-minded.

Table 11 around here

## 5.2 Survey data

In our analysis, we have only evaluated regional data so far. In this subsection, however, we use data from the SOEP, which is an annual representative panel study for German households (Goebel et al., 2018). Besides the annual personal questionnaire, additional surveys are occasionally carried out. In 2018, 2,315 people received a questionnaire with the title "Living in the former GDR". This questionnaire is aimed exclusively at people who lived on the territory of the GDR before reunification and were born in 1972 or earlier. The questionnaire includes questions about living conditions in the GDR period and personal attitudes towards the government at that time. Among other things, the participants are also asked how regularly they have watched certain television broadcasts. One of these broadcasts is the *Tagesschau*, a West German news program broadcasted daily by one of the two public WGTV channels. The respondents could answer this question on the following scale: "never", "rarely", "often", "almost always". $^{17}$  We can link this information to the annual questionnaires via the individual person ID. Table 12 shows that survey participants who live in East German areas that did not have access to WGTV during the GDR period reported that they consumed significantly less WGTV than East German respondents living elsewhere.

#### Table 12 around here

In the questionnaires from 2016 and 2018, the respondents were asked several questions about their attitudes towards refugees. These questions cover opinions related to economic, cultural, and social consequences of the immigration of refugees. Furthermore, respondents were asked whether they consider an influx of refugees more as an opportunity or more as a risk in the short-term and in the long-term. The exact wording of the questions can be found in Table A.3 in the appendix. The respondents had to answer these questions based on a scale ranging from 1 (negative opinion) to 11 (positive opinion). According to our hypothesis in Section 4.1, we expect people who watched WGTV to consider refugees as an enrichment rather than a threat to German society. Therefore, we predict that these people select a higher value on the Likert scale. To test this presumption, we employ the following random-effects model:

$$Y_{it} = \beta_0 + \beta_1 T V_i + \beta_2 X_{it} + \mu_t + Z_i + \epsilon_{it}, \qquad (2)$$

where  $Y_{it}$  represents the answer score of individual *i* on the Likert scale in year *t*.  $TV_i$ is an ordinal variable and takes the value of one if individual *i* had watched *Tagesschau* never before reunification. The variable equals two if respondent *i* has rarely seen it, three if he or she has seen it often, and four if he or she has almost always seen it.  $X_{it}$ denotes a vector of covariates and  $\mu_t$  indicates year dummies.  $Z_i$  represents the individualspecific random effect, while  $\epsilon_{it}$  indicates the error term. The vector of covariates includes gender, age, age<sup>2</sup>, age<sup>3</sup>, marital status, employment status, education level, log. household income, and dummy variables for children in the household, religious affiliation, migration background, and whether the respective individual is currently living in West Germany. We report summary statistics in Table A.4 in the appendix.

The results are shown in Table 13. Model 1 reveals that the respondents who report having watched WGTV while living in the GDR are more optimistic about the effects of refugees on the German economy. As shown in Model 2, they also tend to consider refugees to be an enrichment rather than a disadvantage for the German culture. In addition, we also find a positive and significant television effect in Model 3. As shown in Model 5, they also perceive refugees as an opportunity rather than a risk, at least in the long term. In Model 4, however, we could not find a significant impact of television exposure. Almost all models show that women and people with children in the household have a more positive rating on average. The same is true for individuals with a religious affiliation and for better-educated individuals. Moreover, we find a positive impact of household income.

#### Table 13 around here

In addition to the questions above, the participants were also asked whether or not they had supported refugees by donating money or working with them directly (e.g. providing support in language learning) within the last year or if they plan to do so in the future.<sup>18</sup> We would again assume that individuals, who watched WGTV programs are more likely to support refugees. This time, we employ a random-effects probit model:

$$Y_{it} = \beta_0 + \beta_1 T V_i + \beta_2 X_{it} + \mu_t + Z_i + \epsilon_{it}, \qquad (3)$$

The only difference to regression equation (2) is that  $Y_{it}$  represents a dummy variable, which equals one if individual *i* states in *t* that he or she has donated money in the past year and zero otherwise. The same logic applies to the other outcome. The results are shown in Table 14. Our findings in Model 1 and 2 indicate that watching WGTV more regularly is associated with a higher probability of supporting refugees by donating money. We obtain similar results with regard to the intention to work directly with refugees in the future. Only in Model 3, we do not find a significant effect. Women, individuals with children in their households, and respondents with a religious affiliation are on average more likely to support refugees. Furthermore, we find a positive relationship between the probability of supporting refugees and household income. These results are similar to those of Table 13.

#### Table 14 around here

Our results from Table 13 and 14 remain unchanged in terms of content if we use a dummy variable instead of the ordinal television variable. The results are included in the online appendix.

# 6 Conclusions

Using the natural experiment of the differences in access to Western television that the separation of Germany provided, we have found strong empirical evidence for a mitigating impact of media on xenophobia. Our results show that regions that could receive WGTV were less likely to vote for right-wing parties during the national elections from 1990 to 2017. Moreover, we provide evidence that WGTV exposure has a negative effect on the number of arson attacks as well as the number of incidents related to anti-refugee demonstrations. In fact, the exposure had a positive impact on Germans' current attitudes towards refugees and naturalizations in general. Our results are robust and still visible, even 28 years after the German reunification. Differences between areas with and without Western television cannot be explained by the economic situation, differences between city and countryside or by an inherent "right-wing tradition", as we have demonstrated by using various control variables. Given these results, one might conjecture that it was not by chance that the xenophobic "Pegida" movement in 2015 started in Dresden, right in the "the valley of the clueless." Indeed, the rise of "Pegida" might be a strange and belated side effect of the media censorship in the GDR.

Our findings might also have some broader implications. The recent literature on economic preferences suggests that preferences are affected by experience with markets (Falk and Szech, 2013, Fehr and Hoff, 2011, Henrich et al., 2011). Our results indicate that media provides another channel that has a lasting effect on preferences. Media content may not only reduce xenophobia, but might also, for example, shape preferences in favor of democratization more generally. The easy transfer of information between individuals via social media has led oppressive regimes such as China, Iran and North Korea to restrict access to internet services in fear of democratic tendencies.

On the other hand, modern media might also contribute to the rise of populism. Conducting a text analysis of politicians using Facebook and Twitter, Engesser et al. (2017) provide evidence that populism manifests itself on social media. With the rise of smart television, social media functionalities have recently been evolving in television as well. Our analysis contributes to this literature by showing that television can have a positive and lasting effect on individual attitudes towards foreigners. However, unlike in the case of social media, television content has traditionally been decided upon by program directors that are elected by semi-public broadcasting councils. The content of social media is largely determined by algorithms and what has been referred to as a "filter bubble" (Pariser, 2011).

Future works might investigate insights into the channels through which television affects xenophobia more precisely. Is it a familiarity effect, foreigners becoming "normal" by seeing them so often on the television screen, or was a positive image of foreigners established, although a negative bias in the depiction of foreigners in movies and shows has often be suspected? And how has this difference been preserved since reunification? Is this a case of intergenerational transfer of attitudes? Did the initial success of rightwing parties lead to more visibility, easier recruiting as well as mobilizing and thus to a stable development? To answer such questions, a more in-depth look at surveys regarding attitudes towards foreigners and their demographic distribution would be ideal. Such data, however, does not seem to be available in a high geographical and temporal resolution.

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# Endnotes

- 1. See Pettigrew and Tropp (2006) and Pettigrew et al. (2011) for excellent meta studies.
- In this regard, several recent studies find evidence for a mitigating influence of intergroup contacts on xenophobic attitudes (see e.g. Schindler and Westcott (2020) and Steinmayr (2016)). Conversely, Hangartner et al. (2019) and Dinas et al. (2019) arrive at a contrary result by analyzing the impacts of a massive increase in refugee arrivals on xenophobia in Greece.
- Prior to the advent of private television in West Germany in 1984, these were the only two stations nation-wide. They were still the most frequently watched stations throughout the 1980s.
- 4. We excluded news from the analysis since their foreign content could not be determined in retrospective from the television program. The online appendix includes an overview of the analysis of the television program.
- 5. However, the East German television producer started with increased regularity to buy Western television productions in the late eighties (Kuschel, 2016, p. 290).
- 6. In 1989, there were 92,000 foreign students studying in West Germany (according to the Federal Statistics Bureau of Germany), but only 13,000 in East Germany (Deutsches Historisches Museum Berlin, 2016). In relation to the population size in 1989, we obtain a value of 0.15 % for West Germany and 0.03 % for East Germany. Numbers of foreign visitors to East Germany are difficult to find. The Statistics Bureau of the GDR only recorded the numbers for the most popular tourist region at the Baltic Sea (Bezirk Rostock). In 1987, there were less than 200,000 foreign visitors in this region. The number for the whole GDR can therefore be estimated as less than 2 million, many of them will have been West Germans (counting as foreigners at that time), thus leaving an even smaller amount as "real" foreigners. In the same year in West Germany, the number was 14 million (according to the Federal Statistics Bureau of Germany). The difference is in both cases (students and visitors) much larger than the difference in size between West and East Germany would suggest.
- 7. In this regard, Hyll and Schneider (2018) find that people who bother about their own economic status compared with better-off peers in East Germany in the time after the reunification exhibit more likely negative attitudes towards foreigners.
- In fact, it is a frequent phenomenon that *some* voters switch back and forth between Die Linke and right-wing parties, as surveys have shown, so this motif indeed exists (ARD/Infratest dimap, 2017).
- 9. A recent paper by Hainmueller et al. (2015) contradicts these findings, as it finds no evidence that fears about unemployment and wage reductions drive anti-immigration attitudes.

- 10. East Berlin was not an official district, but was passed for one and fulfilled the function of a district after an administrative reform in 1961. Today, the former area of the GDR in the reunified Germany consists of 75 counties and 61 electoral districts.
- 11. Federal elections take place every four years. After the acting Chancellor Gerhard Schröder lost a motion of no confidence in 2005, an exceptionally early federal election took place.
- 12. The NSFB was a right-wing extremist party in the Weimar Republic that emerged from a collaboration between the German Völkisch Freedom Party (DVFP) and the NSDAP. After the ban of the NSDAP expired in 1925, the NSFB was reabsorbed by the NSDAP. For our results it is not decisive whether we use the voting shares from 1924 or from a later election. However, the election results in the 1930s, in particular, could be influenced by the Great Depression.
- In contrast to our findings, a recent study by Friehe et al. (2020) finds a positive relationship between WGTV exposure and voter turnout in federal and state elections from 1990 to 1999.
- 14. The religious make-up of the county is another example that could be correlated with geography. There are, however, no substantial differences in religious affiliation between the regions in East Germany. Furthermore, the vast majority of the population has no religious affiliation (Federal Statistical Office and the Statistical Offices of the Länder, 2014).
- 15. The same logic also applies to the other time-invariant variables (e.g. the share of foreigners in 1989 or the votes for the NSFB in 1924). If we exclude the votes for the AfD and reestimate the OLS regressions, we do not find such an increase in the magnitude of the TV-dummy.
- 16. The dataset is freely available at https://www.mut-gegen-rechte-gewalt.de/service/ chronik-vorfaelle. A recent paper by Müller and Schwarz (2020) uses the same dataset to analyze the link between social media and hate crime against refugees.
- 17. In addition to the *Tagesschau*, there is another western television show included (*Wetten*, *dass.*?). This show, however, is only broadcast six to seven times a year and is, therefore, less suitable for measuring regular television consumption. The remaining broadcasts could only be seen on EGTV.
- 18. In addition, participants were also asked whether they had actively participated in demonstrations on the subject of refugees. In the original German version of the question, however, it is not possible to differentiate whether it is a question of demonstrations or initiatives that support refugees or that are against refugees.

Figure 1: Division of Germany in occupation zones following World War II. In 1949, the Soviet occupation zone became the GDR (East Germany). The other parts of Germany, including the Western parts of Berlin, formed the Federal Republic of Germany (West Germany). Nowadays, Germany consists of both parts. (Source of map: German Historical Institute.)



Figure 2: Reception of WGTV in the GDR: bright areas had better reception, dark areas little to none. This map is reproduced and slightly modified from Crabtree et al. (2015).



Figure 3: Contact with foreigners was rarer in East Germany – even four years after reunification (the earliest data point). This data has been taken from Schmidt and Weick (1998).



Figure 4: WGTV coverage. The classification is based on a cutoff level of -86.5 dBm. Dark blue colored counties represent the control area with no reception (25 counties) and light blue colored counties the treatment area with a sufficient signal strength (192 counties). District borders are indicated with gray lines. This data has been taken from Crabtree et al. (2015).



Figure 5: West German TV coverage. The classification is based on a cutoff level of -86.5 dBm. Dark blue colored counties represent the control area with no reception and light blue colored counties the treatment area with a sufficient signal strength. Shaded counties are excluded from the analysis. District borders are indicated with gray lines. The left map represents our approach in step one, corresponding to Model 1 in Table 9. The right map concerns Model 2 in Table 9.



	Treatment Area	Control Area		Difference		
	mean	mean	difference	se	p-value	
1955						
share of women $(\%)$	56.79	56.62	0.17	1.09	0.8819	
average household size	2.79	2.90	-0.11	0.16	0.5668	
infant mortality	50.09	45.33	4.76	4.73	0.3601	
suicides per 100,000 inhabitants	24.72	21.99	2.73	4.56	0.5874	
sales per capita	1654.55	1645.00	9.55	119.06	0.9413	
1989						
share of women $(\%)$	51.97	51.60	0.37	0.53	0.5362	
average household size (1981)	2.57	2.70	-0.13	0.10	0.3171	
infant mortality	7.95	6.77	1.19	0.56	0.0686	
suicides per 100.000 inhabitants	27.06	25.63	1.43	1.14	0.5001	
sales per capita	7576.27	7874.33	-298.06	208.48	0.2504	
share of foreigners $(\%)$	1.06	0.94	0.12	0.33	0.7368	
share of foreign tourists in		0.00	0	0.00		
intercamping (%)	18.20	25.18	-6.98	14.41	0.6494	
share of foreign tourists in			,			
vouth leisure facilities $(\%)$	15.77	16.42	-0.66	4 71	0.8920	

Table 1: Differences between treatment and control districts

Note: District differences between treatment (11) and control area (3). East Berlin is excluded from the analysis. P-values based on two-sided Welch's t-tests of difference in means designed for unequal variances.

	Party vote share			Turnout			
	SPD	KPD	Zentrum	DVP	DNVP	NSDAP	
1928							
Berlin	34.0	29.6	3.3	4.3	15.7	1.4	78.9
Chemnitz-Zwickau	33.5	16.2	0.5	11.1	9.1	4.4	77.4
Dresden-Bautzen	39.1	10.3	1.4	10.9	11.5	1.8	79.8
Frankfurt (Oder)	33.1	6.0	6.0	8.4	29.6	1.0	78.7
Leipzig	37.0	16.1	0.6	13.0	6.6	1.9	83.4
Magdeburg	43.0	7.2	1.7	14.1	16.2	1.7	84.4
Mecklenburg	41.7	5.6	0.7	9.4	16.3	2.0	78.3
Merseburg	23.8	24.4	1.4	10.3	21.4	2.7	78.2
Pomerania	30.2	6.1	1.0	5.5	41.6	1.5	77.0
Potsdam I	34.6	17.1	2.1	6.6	22.8	1.7	78.6
Potsdam II	30.6	17.5	3.0	9.2	21.4	1.8	78.0
Thuringa	33.3	12.5	4.1	11.1	8.2	3.7	75.1
Overall (East)	34.3	14.7	2.3	9.3	18.1	2.1	78.8
1930							
Berlin	28.0	33.0	3.6	2.2	11.7	12.8	80.8
Chemnitz-Zwickau	28.3	18.5	0.5	4.1	4.5	23.8	86.1
Dresden-Bautzen	34.7	12.4	1.4	6.4	5.0	16.1	84.2
Frankfurt (Oder)	26.6	9.5	5.8	3.8	13.2	22.7	83.7
Leipzig	34.9	17.2	0.6	9.4	3.7	14.0	88.9
Magdeburg	37.2	10.9	1.8	7.4	7.5	19.5	88.5
Mecklenburg	35.2	8.6	0.7	6.6	10.6	20.1	82.7
Merseburg	19.5	24.9	1.3	6.1	7.9	20.5	85.5
Pomerania	24.7	8.8	1.1	3.3	24.8	24.3	81.3
Potsdam I	28.7	20.0	2.3	3.4	13.9	18.8	83.4
Potsdam II	25.9	19.7	3.4	5.3	14.9	16.7	81.8
Thuringa	28.9	15.2	4.2	5.4	4.3	19.3	83.9
Overall (East)	29.2	17.1	2.4	5.1	10.1	18.9	84.0
1933							
Berlin	22.5	30.1	4.7	0.5	9.1	31.3	85.9
Chemnitz-Zwickau	21.3	19.0	0.6	0.9	5.4	50.0	92.0
Dresden-Bautzen	28.4	13.4	1.9	2.5	7.7	43.6	90.2
Frankfurt (Oder)	18.6	7.4	6.0	0.7	11.1	55.2	89.7
Leipzig	30.1	17.4	1.0	2.0	6.5	40.0	93.0
Magdeburg	27.6	10.5	1.8	1.2	10.7	47.3	91.5
Mecklenburg	26.5	7.4	0.8	1.3	14.9	48.0	88.8
Merseburg	16.4	21.5	1.5	1.2	11.9	46.4	90.0
Pomerania	16.2	7.6	1.1	0.7	17.0	56.3	86.9
Potsdam I	20.8	18.0	2.8	0.8	11.7	44.4	89.2
Potsdam II	20.6	17.8	5.2	1.2	14.0	38.2	87.8
Thuringa	19.2	15.2	4.1	1.5	11.5	47.2	89.8
Overall (East)	22.1	16.0	2.8	1.2	10.8	45.3	89.5

Table 2: Reichstag elections 1928, 1930, and 1933

Note: This table shows the results of the Reichstag elections in 1928, 1930 and 1933 in the constituencies that were later part of the GDR. The "overall" figure refers to the average of the eleven constituencies that later became part of the GDR. The constituencies "Dresden-Bautzen" and "Pomerania" represent areas that had no WGTV reception. However, only a very small part of the constituency "Pomerania" became part of the GDR.

	Treatment	Control	Difference		e
Mecklenburg- West Pomerania	mean	mean	difference	se	p-value
SED (%) CDU (%) LDP (%)	46.42 32.69 14.07	$\begin{array}{c} 48.49 \\ 35.89 \\ 10.60 \end{array}$	-2.07 -3.20 3.47	$3.53 \\ 3.11 \\ 3.66$	$\begin{array}{c} 0.5619 \\ 0.3164 \\ 0.3555 \end{array}$
Saxony					
SED (%) CDU (%) LDP (%)	49.21 25.30 22.25	50.19 22.49 23.72	-0.98 2.81 -1.48	$1.68 \\ 2.31 \\ 3.61$	$0.5692 \\ 0.2400 \\ 0.6887$

Table 3: Voting behavior

Note: County differences in the voting outcome of the three main parties in the federal state election in the year 1946 in the states Mecklenburg-West Pomerania and Saxony. Total number of counties 59 (treatment area: 40 and control area: 19). P-values based on two-sided Welch's t-tests of difference in means designed for unequal variances. Socialist Unity Party of Germany (SED), Christian Democratic Union of Germany (CDU), Liberal Democratic Party of Germany (LDP).

Table 4: Covariate Balance in 2017

	Treatment Area	Control Area	Difference		
	mean	mean	difference	se	p-value
Population density (log.)	5.28	4.64	-0.64	0.39	0.097
Women (%)	49.78	48.95	0.83	0.21	0.000
Average age	46.79	47.32	-0.53	0.63	0.395
Total net migration	3.60	3.21	0.39	0.86	0.649
Foreigners (%)	5.02	3.72	1.30	1.23	0.288
High school dropouts (%)	8.61	8.41	0.20	0.27	0.474
High school diploma (%)	34.45	32.96	1.49	1.64	0.363
Disposable income per capita (log.)	9.83	9.79	0.06	0.02	0.001
Unemployment rate	7.42	9.33	-1.91	0.37	0.000
GDP per capita	28.64	26.71	1.93	1.49	0.197
Foreign visitors	0.65	0.58	0.07	0.33	0.822

Note: Results are based on OLS estimation using population-weighted averages.

Voting behaviour	Mean	Min	Max	Ν	n	т
Right parties	6.29%	0.68%	37.33%	1736	217	8
NPD	1.92%	0.00%	7.07%	1519	217	7
REP	0.73%	0.00%	2.74%	1519	217	7
DVU	1.57%	0.00%	4.79%	434	217	2
AfD	14.32%	0.73%	35.46%	434	217	2
Explanatory variables						
TV-dummy	0.88	0.00	1.00	1736	217	1
Population density (log.)	4.92	3.43	9.32	1736	217	8
Women	50.96%	47.57%	54.24%	1736	217	8
Average age	43.74	36.76	50.21	1519	217	7
Total net migration	-2.99	-56.63	41.79	1736	217	8
Foreigners	1.99%	0.03%	17.65%	1736	217	8
Foreigners in 1989	1.07%	0.41%	1.62%	1736	217	1
Urban county	0.12	0.00	1.00	1736	217	8
High school diploma	29.13%	15.03%	64.23%	1519	217	7
High school dropout	9.99%	3.12%	18.55%	1519	217	7
Disposable income (log.)	9.59	9.19	10.01	1519	217	7
GDP per capita	19.60	12.54	40.90	1519	217	7
Foreign visitors per inhabitant	0.22	0.01	3.87	1519	217	7
Unemployment rate total	15.05%	3.60%	26.80%	1736	217	8
Unemployment rate foreigners	30.58%	7.50%	76.40%	1302	217	6
Votes for NSFB in 1924	4.65%	1.50%	11.90%	1736	217	1
GDRT	0.00	-3.18	2.39	1519	217	7

Table 5: Summary statistics

Note: This table shows descriptive statistics of our variables (mean, minimum and maximum value over time). N(n) refers to the number of observations (counties). T indicates the number of years for which we have information about the respective variable.

	(1)	(2)	(3)	(4)	(5)
TV-dummy	$-1.007^{*}$	$-1.082^{***}$	$-1.338^{***}$	$-1.322^{***}$	$-1.677^{***}$
v	(0.393)	(0.297)	(0.243)	(0.242)	(0.250)
Population density (log.)		0.877***	0.839***	0.840***	$0.857^{***}$
		(0.144)	(0.138)	(0.138)	(0.130)
Women (%)		$-1.561^{***}$	$-1.529^{***}$	$-1.531^{***}$	$-1.435^{***}$
		(0.167)	(0.171)	(0.171)	(0.166)
Average age		$0.326^{**}$	$0.276^{**}$	$0.274^{**}$	-0.188
		(0.114)	(0.094)	(0.095)	(0.186)
Total net migration		0.011	0.011	0.011	0.010
		(0.007)	(0.009)	(0.009)	(0.009)
Foreigners (%)		$-0.478^{***}$	$-0.449^{***}$	$-0.453^{***}$	$-0.450^{***}$
		(0.099)	(0.124)	(0.126)	(0.105)
Foreigners in 1989 (%)		$2.069^{***}$	2.020***	$1.946^{***}$	$1.957^{***}$
		(0.273)	(0.270)	(0.298)	(0.335)
Urban county		$-0.470^{+}$	$-0.439^{*}$	$-0.424^{+}$	$-0.438^{*}$
		(0.240)	(0.224)	(0.225)	(0.219)
High school dropout $(\%)$		0.004	0.008	0.008	-0.008
		(0.023)	(0.023)	(0.023)	(0.022)
High school diploma $(\%)$		0.002	0.003	0.002	-0.004
		(0.012)	(0.013)	(0.013)	(0.013)
Disposable income (log.)			1.689	1.630	2.002
			(1.945)	(1.957)	(1.875)
Unemployment rate total			0.010	0.010	-0.001
			(0.024)	(0.024)	(0.024)
GDP per capita			$0.050^{*}$	$0.050^{*}$	$0.050^{*}$
			(0.022)	(0.022)	(0.021)
Foreign visitors			$-1.606^{***}$	$-1.598^{***}$	$-1.514^{***}$
			(0.422)	(0.427)	(0.348)
Votes for NSFB in 1924				-0.017	-0.005
				(0.033)	(0.033)
GDRT					2.424***
					(0.357)
TV-dummy × GDRT					$-1.776^{***}$
37 1 .	,	/	,	,	(0.382)
Year dummies	√	$\checkmark$	$\checkmark$	$\checkmark$	√
Between $\mathbb{R}^2$	0.05	0.53	0.54	0.54	0.54
Observations	1519	1519	1519	1519	1519

Table 6: Right-wing parties, 1994 - 2017

Note: Random effects model. The dependent variable in all models is the voting outcome for right-wing parties in the federal elections from 1994 to 2017. Standard errors clustered at county level. Significance levels: + p < 0.1, \* p < 0.05, \* p < 0.01, \* p < 0.01.

	(1)	(2)
	Left Parties	Turnout
TV-dummy	0.426	-0.213
	(0.298)	(0.224)
Population density (log.)	0.162	1.030***
	(0.206)	(0.210)
Women (%)	$-0.214^{**}$	-0.043
	(0.079)	(0.081)
Average age	-0.099	$-0.530^{***}$
	(0.087)	(0.096)
Total net migration	$-0.057^{***}$	$0.020^{*}$
	(0.014)	(0.009)
Foreigners (%)	$0.396^{**}$	$-0.170^{*}$
	(0.126)	(0.068)
Foreigners in 1989 (%)	$-3.020^{***}$	$2.711^{***}$
	(0.327)	(0.412)
Urban county	$1.368^{***}$	$-0.859^{*}$
	(0.353)	(0.427)
High school dropout $(\%)$	$-0.062^{+}$	$-0.100^{**}$
	(0.035)	(0.031)
High school diploma $(\%)$	$-0.044^{**}$	$0.096^{***}$
	(0.016)	(0.017)
Disposable income (log.)	1.935	-1.161
	(4.427)	(2.132)
Unemployment rate total	-0.045	-0.054
	(0.042)	(0.036)
GDP per capita	-0.049	-0.066*
	(0.043)	(0.031)
Foreign visitors	$-1.030^{**}$	$-1.331^{***}$
	(0.348)	(0.343)
Votes for NSFB in 1924	-0.063	$0.137^{***}$
	(0.039)	(0.039)
Year dummies	$\checkmark$	✓
Between $\mathbb{R}^2$	0.32	0.46
Observations	1519	1519

Table 7: Voting outcome left party and turnout

Note: Random effects models. The dependent variable in Model 1 (2) is the voting outcome for the left-wing parties (voting turnout) in the federal elections from 1994 to 2017. Standard errors clustered at county level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

	(1) Border Dummy	(2) Border Distance	(3) West Germany	(4) West Germany
			Dummy	Distance
TV dummy	$-0.952^{***}$	$-0.769^{**}$	$-1.204^{***}$	$-1.122^{***}$
Border dummy	(0.213) $1.100^{***}$ (0.165)	(0.256)	(0.258)	(0.268)
Border distance (log.)	(0.100)	$-0.439^{***}$ (0.087)		
West Germany dummy			$-0.432^{*}$ (0.173)	
West Germany distance (log.)			· · · · ·	$0.229^{*}$
Population density (log.)	$0.924^{***}$	$0.945^{***}$	$0.809^{***}$	(0.094) $0.879^{***}$ (0.130)
Women (%)	(0.135) $-1.507^{***}$ (0.167)	(0.150) $-1.519^{***}$ (0.168)	(0.137) $-1.523^{***}$ (0.170)	(0.133) $-1.518^{***}$ (0.170)
Average age	(0.101) $0.284^{**}$ (0.092)	(0.100) $0.249^{**}$ (0.093)	(0.110) $0.293^{**}$ (0.095)	$0.294^{**}$ (0.094)
Total net migration	0.011 (0.009)	0.012 (0.009)	0.009 (0.009)	0.010 (0.009)
Foreigners (%)	$-0.457^{***}$ (0.123)	$-0.473^{***}$ (0.127)	$-0.439^{***}$ (0.126)	$-0.449^{***}$ (0.127)
For eigners in 1989 (%)	$1.499^{***}$ (0.263)	$1.263^{***}$ (0.268)	$1.782^{***}$ (0.311)	$1.748^{***}$ (0.304)
Urban county	$-0.490^{*}$ (0.192)	$-0.562^{**}$ (0.191)	$-0.433^+$ (0.231)	$-0.455^{*}$ (0.231)
High school dropout (%)	$0.009 \\ (0.022)$	$\begin{array}{c} 0.020 \\ (0.022) \end{array}$	$0.005 \\ (0.023)$	$0.009 \\ (0.023)$
High school diploma (%)	-0.001 (0.012)	-0.005 (0.012)	$0.001 \\ (0.013)$	-0.001 (0.012)
Disposable income (log.)	$2.229 \\ (1.876)$	$1.985 \\ (1.921)$	$1.194 \\ (2.018)$	$0.899 \\ (2.048)$
GDP per capita	$0.049^{*}$ (0.022)	$0.041^+$ (0.022)	$0.051^{*}$ (0.022)	$0.047^{*}$ (0.023)
Foreign visitors	$-1.318^{**}$ (0.421)	$-1.380^{**}$ (0.425)	$-1.611^{***}$ (0.424)	$-1.612^{***}$ (0.424)
Unemployment rate total	$0.014 \\ (0.024)$	$0.019 \\ (0.024)$	-0.010 (0.026)	-0.013 (0.026)
Votes for NSFB in 1924	$0.004 \\ (0.027)$	-0.000 (0.028)	-0.020 (0.031)	-0.007 (0.031)
Year dummies	$\checkmark$	✓	$\checkmark$	$\checkmark$
Between $\mathbb{R}^2$ Observations	$\begin{array}{c} 0.62 \\ 1519 \end{array}$	$0.62 \\ 1519$	$0.55 \\ 1519$	$0.56 \\ 1519$

Table 8: Distances

Note: Random effects models. In both models, the dependent variable is the voting outcome for right-wing parties in the federal elections from 1994 to 2017. Model 1 (3) includes a dummy variable that equals one if the respective county is located in an electoral district which is situated next to the border to Poland or to the Czech Republic (next to West Germany). Model 2 (4) includes a variable that measures the distance between the administrative center of each county and its closest border either to Poland or to the Czech Republic (closest border to West Germany). The distance is measured by a geodesic and stated in kilometers. Standard errors clustered at county level. Significance levels:  $^+ \ p < 0.1, \ ^* \ p < 0.05, \ ^* \ p < 0.01.$ 

	(1)	(2)
TV-dummy	$-1.571^{***}$	$-1.879^{***}$
5	(0.240)	(0.209)
Population density (log.)	0.718***	0.732***
	(0.139)	(0.115)
Women (%)	$-1.491^{***}$	$-1.455^{***}$
	(0.170)	(0.173)
Average age	$0.374^{***}$	0.315***
	(0.094)	(0.057)
Total net migration	0.014	0.008
	(0.009)	(0.008)
Foreigners (%)	$-0.334^{**}$	$-0.376^{***}$
	(0.123)	(0.092)
Foreigners in 1989 (%)	$2.089^{***}$	$2.386^{***}$
	(0.277)	(0.253)
Urban county	$-0.383^{+}$	$-0.442^{*}$
	(0.214)	(0.208)
High school dropout $(\%)$	-0.021	$-0.033^{+}$
	(0.020)	(0.018)
High school diploma $(\%)$	0.010	0.008
	(0.013)	(0.012)
Disposable income (log.)	1.103	1.192
	(1.722)	(1.716)
Unemployment rate total	-0.021	-0.025
	(0.023)	(0.023)
GDP per capita	0.062**	0.085***
	(0.021)	(0.017)
Foreign visitors	$-1.917^{***}$	$-1.531^{***}$
	(0.469)	(0.275)
Votes for NSFB in 1924	0.013	0.024
	(0.028)	(0.028)
Year dummies	$\checkmark$	√
Between $\mathbb{R}^2$	0.61	0.65
Observations	1393	1295

Table 9: Spillover effects

Note: Random effects models. In both models, the dependent variable is the voting outcome for right-wing parties in the federal elections from 1994 to 2017. In Model 1, the 18 counties of the treatment area that are located next to the control area are excluded. In Model 2, the 14 counties of the control area that are situated next to the treatment area are additionally excluded. Figure 5 illustrates the approach. Standard errors clustered at county level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

	(1)	(2)	(3)	(4)
	1990	1994	1998	2002
TV-dummy	$-0.172^{+}$	-0.161*	$-0.572^{**}$	$-0.320^{+}$
	(0.088)	(0.067)	(0.192)	(0.162)
Population density (log.)	$-0.100^{*}$	-0.039	$-0.212^{+}$	$0.148^{+}$
	(0.041)	(0.050)	(0.108)	(0.089)
Women (%)	-0.008	$0.189^{*}$	0.326	0.068
	(0.055)	(0.074)	(0.219)	(0.130)
Average age	-0.011	-0.010	0.038	0.040
	(0.038)	(0.030)	(0.081)	(0.050)
Total net migration	$-0.012^{**}$	0.007	0.003	$-0.022^{**}$
	(0.004)	(0.013)	(0.007)	(0.008)
Foreigners (%)	0.091***	-0.035	0.055	$-0.099^{**}$
	(0.026)	(0.029)	(0.083)	(0.038)
Foreigners in 1989 (%)	-0.017	0.083	$0.625^{*}$	0.541***
	(0.115)	(0.074)	(0.245)	(0.126)
Urban county	0.044	$-0.083^{'}$	$-0.352^{*}$	$-0.137^{-0.137}$
	(0.116)	(0.058)	(0.137)	(0.112)
High school dropout (%)	· · ·	0.012	-0.032	$-0.094^{***}$
- · · /		(0.012)	(0.020)	(0.017)
High school diploma (%)		-0.003	$-0.033^{+}$	$-0.034^{**}$
- · · · /		(0.008)	(0.017)	(0.012)
Disposable income (log.)		-0.822	-0.364	4.088***
		(0.593)	(1.964)	(1.203)
Unemployment rate total	-0.005	-0.006	0.036	0.004
	(0.011)	(0.021)	(0.022)	(0.013)
Unemployment rate foreigners	· · /	( )	$-0.110^{***}$	$-0.054^{***}$
			(0.019)	(0.012)
GDP per capita		$0.087^{*}$	0.131	-0.012
		(0.041)	(0.107)	(0.020)
Foreign visitors		$0.875^{**}$	0.324	$-0.437^{'}$
~		(0.303)	(0.649)	(0.382)
Votes for NSFB in 1924	0.010	0.003	$-0.064^{**}$	$-0.065^{***}$
	(0.013)	(0.007)	(0.021)	(0.015)
$\mathbb{R}^2$	0.16	0.26	0.67	0.62
Observations	217	217	217	217

Table 9a: OLS: Cross-sections (1990-2002)

Note: OLS estimations. Each model refers to one specific federal election. The dependent variable on the Model 1-4 is the voting outcome for right-wing parties in the federal elections from 1990 to 2002. Standard errors clustered at county level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

	(5) 2005	(6) 2009	(7) 2013	(8) 2017
TV-dummy	-1 931***	-1 225***	-9 977***	-2 968*
i v-dummy	(0.233)	(0.184)	(0.369)	(1.257)
Population density (log )	0.323*	-0.095	0.089	0.759
i opulation density (log.)	(0.149)	(0.089)	(0.196)	(0.629)
Women (%)	-0.288	-0.169	0.211	-1 359***
Wollieli (70)	(0.200)	(0.147)	(0.334)	(0.400)
Average age	(0.214) 0.284**	(0.147) 0.124 <sup>+</sup>	(0.354) 0.225 <sup>+</sup>	0.954**
Average age	(0.204)	(0.064)	(0.116)	(0.304)
Total net migration	-0.042**	(0.004)	0.042	0.107
rotar net ingration	(0.042)	(0.021)	(0.036)	(0.096)
Foreigners (%)	0.066	(0.021)	(0.030)	(0.090)
Foreigners (70)	-0.000	(0.095)	(0.105)	(0.456)
Foreigners in 1989 $(\%)$	1.056***	1 195***	2 524***	6 250***
Foreigners in 1969 (70)	(0.270)	(0.100)	(0.303)	(0.233)
Urban county	(0.279)	(0.190)	(0.393)	0.325)
Orban county	(0.395)	(0.137)	(0.316)	(0.025)
High school dropout (%)	-0.196***	(0.137)	(0.310)	0.104
ingli school uropout (70)	(0.040)	(0.023)	(0.057)	(0.104)
High school diploma (%)	(0.040)	0.025***	(0.037)	(0.190)
ingli school dipionia (70)	-0.029	(0.000)	(0.010)	(0.019)
Disposable income (log)	(0.019)	(0.009)	(0.020) 6 427*	(0.050)
Disposable income (log.)	(2.121)	4.902	-0.427	4.311
Unonumber ont note total	(2.172)	(1.720) 0.140***	(5.190)	(0.002)
Unemployment rate total	(0.017)	(0.140)	-0.209	-0.501
Unormalorment note fensionens	(0.027)	(0.040)	(0.070)	(0.280)
Unemployment rate foreigners	$-0.010^{+}$	-0.040	-0.025	(0.005)
	(0.008)	(0.010)	(0.020)	(0.059)
GDP per capita	-0.009	-0.053	$-0.070^{\circ}$	-0.025
Familian addition	(0.030)	(0.019)	(0.034)	(0.078)
Foreign visitors	-0.629	-1.064	-0.413	-3.330
V C NORD : 1004	(0.503)	(0.244)	(0.425)	(1.290)
Votes for NSFB in 1924	0.034	0.020	0.081	-0.118
	(0.025)	(0.024)	(0.049)	(0.106)
$\mathbb{R}^2$	0.58	0.56	0.44	0.62
Observations	217	217	217	217

Table 9b: OLS: Cross-sections (2009-2017)

Note: OLS estimations. Each model refers to one specific federal election. The dependent variable in the Model 5-8 is the voting outcome for right-wing parties in the federal elections from 2005 to 2017. Standard errors clustered at county level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

	(1)	(2)	(3)	(4)
	Arson	Battery	Other assaults	Demonstration
TV-dummy	0.528***	0.821	0.945	$0.647^{+}$
,	(0.000)	(0.185)	(0.587)	(0.072)
Refugees in 1,000	1.138***	0.999	$1.024^{*}$	1.026
	(0.000)	(0.943)	(0.017)	(0.261)
Population density (log.)	1.167	0.927	0.945	1.793***
	(0.244)	(0.478)	(0.475)	(0.000)
Women (%)	1.025	1.008	1.023**	1.087**
	(0.108)	(0.484)	(0.004)	(0.002)
Average age	0.622***	0.844**	$0.878^{*}$	0.806**
	(0.000)	(0.002)	(0.017)	(0.007)
Total net migration	$0.955^{***}$	0.992	$0.993^{+}$	1.015
	(0.001)	(0.180)	(0.079)	(0.185)
Foreigners (%)	0.541***	1.060	0.947	$0.815^{*}$
	(0.000)	(0.427)	(0.275)	(0.046)
Foreigners in 1989 (%)	0.956	$1.897^{**}$	3.009***	4.215***
- , ,	(0.883)	(0.002)	(0.000)	(0.000)
Urban county	0.672	0.884	0.864	0.815
	(0.119)	(0.422)	(0.322)	(0.257)
High school dropout $(\%)$	1.011	1.001	1.016	1.039
	(0.826)	(0.968)	(0.595)	(0.415)
High school diploma $(\%)$	1.014	0.989	$1.018^{+}$	0.988
	(0.424)	(0.322)	(0.074)	(0.647)
Disposable income (log.)	0.087	0.462	1.921	0.372
	(0.440)	(0.660)	(0.359)	(0.718)
Unemployment rate total	1.068	$1.100^{*}$	$1.071^{*}$	1.039
	(0.311)	(0.038)	(0.019)	(0.548)
GDP per capita	0.996	1.019	1.004	$0.921^{***}$
	(0.830)	(0.198)	(0.713)	(0.000)
Foreign visitors	$0.604^{*}$	0.998	1.154	1.362
	(0.023)	(0.989)	(0.304)	(0.194)
Votes for NSFB in 1924	$0.912^{**}$	1.007	0.986	1.028
	(0.004)	(0.635)	(0.396)	(0.357)
Year dummies	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Log pseudolikelihood	-614.62	-2102.57	-2583.87	-703.18
Observations	868	868	868	868

Table 10: Hate crime

Note: Random-effects poisson model. In all models, we report incident rate ratios. The dependent variables in Model 1 and 2 are the number of arson attacks and the number of battery crimes. In Model 3 and 4 the dependent variables are the number of other assaults and the number of incidents during anti-refugee demonstrations. Standard errors clustered at county level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

	(1) naturalization (per foreigner)	(2) naturalization (per capita)
TV-dummy	0.884*	0.075**
_ · · <i></i>	(0.428)	(0.024)
Border Distance (log.)	-0.136	$-0.011^{+}$
	(0.135)	(0.006)
Population density (log.)	0.324	0.061***
F	(0.240)	(0.014)
Women (%)	-0.015	$-0.004^{**}$
	(0.027)	(0.001)
Average age	$-0.691^{***}$	$-0.033^{***}$
0 0	(0.131)	(0.008)
Total net migration	$-0.052^{***}$	$-0.001^{**}$
0	(0.009)	(0.001)
Foreigners (%)	· · · · ·	0.034***
0 ( )		(0.009)
Foreigners in 1989 (%)	-0.024	-0.036
	(0.585)	(0.030)
Urban county	0.553	0.037
	(0.489)	(0.031)
High school dropout $(\%)$	$0.269^{**}$	$0.011^{***}$
	(0.082)	(0.003)
High school diploma $(\%)$	-0.015	-0.001
	(0.028)	(0.001)
Disposable income (log.)	6.643	0.226
	(4.845)	(0.235)
GDP per capita	-0.056	0.002
	(0.043)	(0.002)
Foreign visitors	0.050	$0.071^{+}$
	(0.404)	(0.040)
Unemployment rate total	0.033	$0.009^{+}$
	(0.101)	(0.004)
Votes for NSFB in 1924	-0.037	$-0.005^{+}$
	(0.057)	(0.003)
Year dummies	✓	✓
Between $\mathbb{R}^2$	0.16	0.76
Observations	651	651

Table 11: Naturalization

Note: Random effects models. The dependent variable in Model 1 (2) is the number of naturalizations per foreigner (naturalizations per capita) from 2015 to 2018. Standard errors clustered at county level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

<b>Panel A</b> (2018)	Self-reported WGTV consumption			
	Never	Rarely	Often	almost always
areas without WGTV	68.48%	18.29%	9.34%	3.89%
	(176)	(47)	(24)	(10)
areas with WGTV	14.35%	26.49%	35.90%	23.26%
	(253)	(467)	(633)	(410)
<b>Panel B</b> (1990)	Self-reported WGTV consumption			
	Never	Rarely	Often	almost always
areas without WGTV	67.11%	22.37%	9.21%	1.32%
	(51)	(17)	(7)	(1)
areas with WGTV	14.99%	22.49%	37.32%	25.20%
	(94)	(141)	(234)	(158)

#### Table 12: Self-reported WGTV consumption

Note: This table shows the self-reported frequency with which respondents watched WGTV during the GDR period. We divide the respondents according to their place of residence into regions without WGTV reception in the GDR period and regions with WGTV reception in the GDR period. Panel A includes all respondents interviewed in 2018 minus 295 individuals who reported that they lived in West Germany in 2018. Panel B only includes those individuals who received the questionnaire "Living in the GDR" in 2018 and who have been part of the annual SOEP surveys since 1990. The numbers in brackets show absolute numbers.

	(1)	(2)	(3)	(4)	(5)
	(- <i>)</i>			Opportunity	Opportunity
	Economy	Culture	Better Place	(short-term)	(long-term)
TV (ordinal)	0.113*	0.081+	$0.074^{+}$	0.054	$0.092^{+}$
	(0.046)	(0.049)	(0.044)	(0.039)	(0.049)
Female	0.090	0 445***	0.222*	0 247**	0.266*
i omulo	(0.100)	(0.104)	(0.094)	(0.083)	(0.108)
Age	-0.285	0.005	(0.034) -0.310	-0.088	-0.348
Age	(0.336)	(0.320)	(0.200)	(0.268)	(0.331)
$\Lambda m^2$	(0.330)	(0.329)	0.005	(0.208)	0.006
Age	(0.005)	(0.001)	(0.005)	(0.002)	(0.005)
A3	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)
Age	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marital status (omitted: Married)	0.000	0.415*	0.151	0.140	0.015
Single	0.029	0.417*	0.171	0.162	0.315
<b></b>	(0.184)	(0.201)	(0.177)	(0.152)	(0.201)
Divorced	0.144	$0.285^{+}$	$0.262^{+}$	0.148	0.204
	(0.156)	(0.160)	(0.141)	(0.128)	(0.164)
Widowed	0.053	-0.065	-0.096	0.036	0.022
	(0.149)	(0.152)	(0.140)	(0.121)	(0.163)
Children in household	0.239	$0.435^{*}$	$0.365^{*}$	$0.329^{*}$	$0.400^{*}$
	(0.192)	(0.190)	(0.171)	(0.156)	(0.194)
Religious affiliation	$0.303^{**}$	0.150	$0.339^{***}$	$0.244^{**}$	$0.348^{**}$
	(0.107)	(0.111)	(0.102)	(0.091)	(0.116)
Employment status (omitted: Full-time)					
Part-time	0.143	0.231	-0.006	-0.095	0.041
	(0.152)	(0.159)	(0.141)	(0.129)	(0.159)
Not employed	-0.117	0.080	0.135	$-0.214^{+}$	$-0.175^{\circ}$
1 0	(0.142)	(0.137)	(0.132)	(0.121)	(0.142)
Education (omitted: Low)	(0)	(0.201)	(01-0-)	(*)	(**= ==)
Medium	$0.354^{**}$	$0.249^{+}$	$0.322^{**}$	$0.232^{*}$	$0.266^{+}$
	(0.132)	(0.135)	(0.123)	(0.110)	(0.139)
High	1 405***	1 336***	1 165***	0.800***	1.388***
mgn	(0.136)	(0.143)	(0.130)	(0.116)	(0.147)
Household income (log)	0.447***	0.140)	0.465***	0.243**	0.475***
Household meome (log.)	(0.110)	(0.112)	(0.100)	(0.245)	(0.114)
Mignotion bookground	0.560	(0.112)	0.100)	(0.030)	(0.114)
Migration background	-0.300	-0.074	-0.099	-0.113	-0.447
Lining in West Comment	(0.409)	(0.408)	(0.500)	(0.391)	(0.457)
Living in West Germany	0.309	0.258	0.284	0.147	(0.373)
N/ 1 ·	(0.175)	(0.175)	(0.150)	(0.147)	(0.188)
Year dummies	✓	✓	✓	√	✓
Between $\mathbb{R}^2$	0.11	0.10	0.09	0.06	0.10
Observations	4064	4072	4066	4077	4064

# Table 13: Attitudes towards refugees

Note: Random effects models. The different number of observations results from the fact that some people did not give an answer to all five questions. If we exclude people who did not answer all five questions, our results are almost unchanged. Standard errors clustered at individual level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

	(1) Donating (past)	(2) Donating (future)	(3) Working (past)	(4) Working (future)
TV (ordinal)	0.014*	0.020**	0.001	0.011**
I (oraliai)	(0.006)	(0.007)	(0.003)	(0.004)
Female	0.067***	0.063***	$0.010^{+}$	0.010
	(0.014)	(0.015)	(0.006)	(0.009)
Age	-0.031	0.002	0.010	-0.020
8-	(0.052)	(0.053)	(0.028)	(0.046)
$Age^2$	0.001	0.000	-0.000	0.000
0	(0.001)	(0.001)	(0.000)	(0.001)
$Age^3$	-0.000	-0.000	0.000	-0.000
8-	(0.000)	(0.000)	(0.000)	(0.000)
Marital status (omitted: Married)	()	()	()	()
Single	-0.009	-0.011	-0.002	0.009
	(0.027)	(0.028)	(0.011)	(0.017)
Divorced	0.022	0.032	0.009	$0.023^{+}$
	(0.023)	(0.023)	(0.009)	(0.014)
Widowed	-0.008	0.010	0.014	0.020
	(0.021)	(0.024)	(0.012)	(0.016)
Children in household	0.059*	$0.062^{*}$	$0.020^{+}$	0.006
	(0.025)	(0.027)	(0.011)	(0.016)
Religious affiliation	0.050***	0.067***	$0.015^{*}$	0.013
0	(0.015)	(0.016)	(0.006)	(0.009)
Employment status (omitted: Full-time)	( )		( )	( )
Part-time	0.033	0.008	0.008	0.018
	(0.022)	(0.024)	(0.011)	(0.015)
Not employed	0.023	0.004	-0.008	-0.001
1 0	(0.021)	(0.023)	(0.010)	(0.013)
Education (omitted: Low)			· · · · ·	· · · ·
Medium	$0.044^{**}$	$0.037^{*}$	-0.005	-0.002
	(0.016)	(0.017)	(0.007)	(0.009)
High	0.163***	0.188***	$0.037^{***}$	0.070***
-	(0.019)	(0.021)	(0.009)	(0.013)
Household income (log.)	0.112***	0.104***	0.019**	0.031**
	(0.016)	(0.017)	(0.007)	(0.010)
Migration background	0.041	-0.011	0.024	0.003
	(0.061)	(0.076)	(0.023)	(0.036)
Living in West Germany	0.026	0.039	0.003	0.004
J V	(0.024)	(0.024)	(0.009)	(0.013)
Year dummies	$\checkmark$	`√ ´	$\checkmark$	$\checkmark$
Log pseudolikelihood	-1594 57	-1671.64	_458.02	_7/3 01
Observations	4072	4002	4055	3991
Household income (log.) Migration background Living in West Germany Year dummies Log. pseudolikelihood Observations	$\begin{array}{c} 0.112^{***}\\ (0.016)\\ 0.041\\ (0.061)\\ 0.026\\ (0.024)\\ \checkmark\\ \hline\\ -1524.57\\ 4072\\ \end{array}$	$0.104^{***}$ (0.017) -0.011 (0.076) 0.039 (0.024) $\checkmark$ -1671.64 4002	$\begin{array}{c} 0.019^{**} \\ (0.007) \\ 0.024 \\ (0.023) \\ 0.003 \\ (0.009) \\ \checkmark \\ \hline -458.92 \\ 4055 \end{array}$	$\begin{array}{c} 0.031^{**}\\ 0.031^{**}\\ (0.010)\\ 0.003\\ (0.036)\\ 0.004\\ (0.013)\\ \checkmark\\ \hline\\ -743.91\\ 3991\\ \end{array}$

# Table 14: Refugee-related activities

Note: Random effects probit models. All models report probit average marginal effects. The different number of observations results from the fact that some people did not give an answer to all four questions. If we exclude people who did not answer all four questions, our results are almost unchanged. Standard errors clustered at individual level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

# Appendix

Dependent variables	Description
Arson	The variable measures the number of arson attacks and was measured at the county level.
Battery	The variable measures the number of battery crimes and was measured at the county level.
Demonstration	The variable measures the number of incidents during anti-refugee demonstrations and was measured at the county level.
Left party	The variable measures the percentage of votes the left-wing party "Party of Democratic Socialism" ( <i>Partei des Demokratischen Sozialismus</i> , PDS) – which was renamed "The Left" ( <i>Die Linke</i> ) in 2007 – received in the national elections to the German Federal Parliament ( <i>Bundestag</i> ) in the years from 1990 to 2017. The variable is measured at the county level.
Naturalization per capita	The variable measures the number of naturalization per capita and was measured at the county level.
Naturalization per foreigners	The variable measures the number of naturalization per foreigners and was measured at the county level.
Other assaults	The variable measures the number of other assaults and was measured at the county level.
Right parties	The variable measures the percentage of votes right-wing parties received in the national elections to the German Federal Parliament ( <i>Bundestag</i> ) during the years from 1990 to 2017. The data is measured at the county level. We consider as right-wing parties the "Alternative for Germany" ( <i>Alternative für Deutschland</i> , AfD), the "German People's Union" ( <i>Deutsche Volksunion</i> , DVU), the "National Party of Germany" ( <i>Nationaldemokratische Partei Deutschlands</i> , NPD), and "The Republicans" ( <i>Die Republikaner</i> , REP). The variable is measured at the county level.
Voter turnout	The variable measures voter turnout in the national elections to the German Federal Parliament $(Bundestag)$ in the years from 1994 to 2017. The variable is measured at the electoral district level.
Variables of interest	
TV-dummy	This dummy variable varies at the county level and equals one if the WGTV signal strength was at least -86.5 dBm.
Control variables	
Average age	The variable measures the average age of the population in years and was measured at the county level.
Border distance (log.)	The variable measures the geodesic line between the administrative center of each GDR county and its closest border (either to Poland or to the Czech Republic). This variable is calculated with the geographic information system ArcGIS.
Border dummy	The dummy variable equals one if the respective county is located in an electoral district which is situated next to the border to Poland or to the Czech Republic.
Disposable income (log.)	The variable measures the average amount of money that households have available for consumption and saving after income taxes have been accounted for. The disposable income was measured at the county level.
Foreigners (%)	The variable measures the share of the population that was foreigners in the respective election year and was measured at the county level.
Foreigners in 1989 (%)	The variable measures the share of the population that was for eigners in 1989 and was available at the district level $(DDR \ Bezirke).$

# Table A.1: List and definition of variables

table continues on the next page

Foreign visitors	The variable measures the number of overnight stays by foreigners relative to the total pop- ulation number in the respective election year and was measured at the county level.
GDP per capita	The variable measures the GDP in $\in$ 1,000 per capita in the respective year and was measured at the county level.
High school diploma (%)	The variable measures the percentage of school-leavers that graduated with a university entrance certificate in the respective election year and was measured at the county level.
High school dropout (%)	The variable measures the percentage of high school dropouts in the respective election year and was measured at the county level.
Population density (log.)	Population density measures the population per $\rm km^2$ living in a certain region in the respective election year and was measured at the county level.
Relevant lifetime spent in the GDR	The variable measures the average number of relevant years the counties' inhabitants had spent in the former GDR for each county and each election year. Relevant years refer only to years spent in the former GDR after the 14th year of life. Someone who was 15 years old at the time of the fall of the Berlin Wall would enter the calculation with a value of one. To make a comparison between the individual counties possible, we subtract the overall average number over relevant years in a given year from the average of each county.
Total net migra- tion	The variable measures the share of total net migration per 1.000 inhabitants and was measured at the county level.
Unemployment rate foreigners	The unemployment rate of foreigners is the percentage of the labor force that are foreigners and jobless. The data was available at the county level for the election years 2005, 2009, 2013 and 2017 and at the federal state level for the election years in 1998 and 2002.
Unemployment rate total	The unemployment rate is the percentage of the labor force that was jobless in the respective election year and was measured at the county level.
Urban county	This dummy variable varies at the county level and equals one if the respective county is an urban district and zero if it is a rural district.
Votes for NSFB in 1924	The variable measures the percentage of people that voted for the "National Socialist Freedom Movement" ( <i>Nationalsozialistische Freiheitspartei</i> , NSFB) in 1924.
West Germany distance (log.)	The variable measures the closest distance between the administrative center of each GDR county and the inner-German border. This variable is calculated with the geographic information system ArcGIS.
West Germany dummy	The dummy variable equals one if the respective county is located in an electoral district situated next to the former inner-German border.
Women (%)	The variable measures the share of women in the respective election year and was measured at the county level.

# Table A.1: List and definition of variables (proceeding)

Note: This table includes for each variable used in Section 4 and 5.1 a short description.

	(1)	(2)	(3)	(4)
TV-dummy	$-0.909^{**}$	$-0.823^{**}$	$-0.807^{**}$	$-0.778^{**}$
	(0.347)	(0.280)	(0.273)	(0.270)
Population density (log.)		$0.687^{***}$	$0.694^{***}$	$0.696^{***}$
		(0.104)	(0.106)	(0.105)
Women (%)		$-1.296^{***}$	$-1.301^{***}$	$-1.307^{***}$
		(0.142)	(0.146)	(0.148)
Total net migration		-0.001	-0.001	-0.001
		(0.005)	(0.005)	(0.005)
Foreigners (%)		$-0.579^{***}$	$-0.578^{***}$	$-0.584^{***}$
		(0.075)	(0.075)	(0.075)
For eigners in 1989 (%)		$2.368^{***}$	$2.371^{***}$	$2.189^{***}$
		(0.215)	(0.216)	(0.258)
Urban county		-0.383	-0.390	-0.358
		(0.248)	(0.247)	(0.244)
Unemployment rate total			0.010	0.010
			(0.018)	(0.018)
Votes for NSFB in 1924				-0.039
				(0.031)
Year dummies	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Between $\mathbb{R}^2$	0.05	0.44	0.44	0.44
Observations	1736	1736	1736	1736

Table A.2: Right-wing parties with a reduced set of controls, 1990 - 2017

Note: Random effects model. The dependent variable in all models is the voting outcome for right-wing parties in the federal elections from 1990 to 2017. Standard errors clustered at county level. Significance levels: + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

# Table A.3: SOEP questionnaire

Variable	Question		Possible answers	
TV (ordinal)	How often have you seen the fol- lowing TV shows: Tagesschau	□ never	$\Box$ rarely $\Box$ often $\Box$ al	most always
Economy	Is it generally good or bad for the German economy that refugees are coming here?	Bad for the economy		Good for the economy
Culture	Will refugees erode or enrich cul- tural life in Germany?	Erode		Enrich
Better Place	Will Germany become a better or worse place to live because of the refugees?	A worse place		A better place
Opportunity (short-term)	Does a large influx of refugees mean more risks or more opportu- nities in the short term?	More risks in the short term		More opportunities in the short term
Opportunity (long-term)	Does a large influx of refugees mean more risks or more opportu- nities in the long term?	More risks in the long term		More opportunities in the long term
Donating (past)	Donating money or goods to help refugees: Have you done that since last year?		Yes or No	
Donating (future)	Donating money or goods to help refugees: Do you plan to (also) do that in the future?		Yes or No	
Working (past)	Working with refugees directly (e.g., accompanying them to gov- ernment agencies, providing sup- port in language learning): Have you done that since last year?		Yes or No	
Working (future)	Working with refugees directly (e.g., accompanying them to gov- ernment agencies, providing sup- port in language learning): Do you plan to (also) do that in future?		Yes or No	

Note: This table shows the questions and corresponding answers of the SOEP questionnaires from 2016 and 2018 used in Section 5.2. The entire English version of the questionnaires as well as the original German wording are available at https://www.diw.de/en/diw\_02.c.222729.en/questionnaires.html.

Dependent variables	Mean	Std. dev.	Min	$\mathbf{Max}$	Ν
Economy	5.15	2.56	1.00	11.00	4064
Culture	4.83	2.61	1.00	11.00	4072
Better Place	4.36	2.34	1.00	11.00	4066
Opportunity (short-term)	3.40	2.10	1.00	11.00	4077
Opportunity (long-term)	4.45	2.68	1.00	11.00	4064
Donating (past)	0.17	0.38	0.00	1.00	4072
Donating (future)	0.20	0.40	0.00	1.00	4002
Working (past)	0.03	0.17	0.00	1.00	4055
Working (future)	0.06	0.23	0.00	1.00	3991
TV (ordinal)	2.53	1.05	1.00	4.00	4101
Explanatory variables					
Formala	2.55	1.05	1.00	4.00	4101
Ago	63.28	11.34	44.00	101.00	4101
Age <sup>2</sup>	4132.34	1479 43	1936.00	10201.00	4101
Age <sup>3</sup>	278173.05	149202.26	85184.00	1030301.00	4101
Marital status	1.86	1.39	1.00	5.00	4101
Children in household	0.11	0.31	0.00	1.00	4101
Religious affiliation	0.27	0.44	0.00	1.00	4101
Employment status	2.19	0.93	1.00	3.00	4101
Education	2.07	0.74	1.00	3.00	4101
Household income (log.)	7.76	0.52	5.70	9.43	4101
Migration background	0.01	0.10	0.00	1.00	4101
Living in West Germany	0.09	0.28	0.00	1.00	4101

Table A.4: SOEP data: Summary statistics

Note: This table shows descriptive statistics of our variables (means, standard deviation, minimum and maximum value over time). N refers to the number of observations.