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The long-term effect of Television on Hate Crime

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Abstract

This paper analyzes the long-term impact of television on hate crimes in Germany. In the German Democratic Republic (GDR) foreign television served as a window to the world and exposed viewers to foreign influences. But certain parts of the GDR were excluded from receiving Western television due to geographical features. I argue that this resulted in long-lasting differences in the attitude towards foreigners. Using the spatial variation in signal strength as a natural experiment, the paper tests the effect of Western broadcasts on the rate of hate crimes. Municipalities with no access to foreign broadcasts exhibit a higher degree of xenophobic violence in the period of the migration crisis in Germany between 2014 to 2017. It shows that media can lead to preference changes that persist for a long time after the exposure.

Keywords: hate crimes, refugees, natural experiment, media

JEL Classification: J15, K42

1 Introduction

Migration has become one of the main features of modern societies. Nevertheless, there is a cultural backlash against migrants and they are facing harassment and violence. In Europe, 24 percent of persons with a migrant background state that they were a victim of hate-motivated harassment in the previous year and three percent experienced an attack due to their foreign origin.[2] These xenophobic attacks entail social and economic repercussions. They decrease the integration effort of foreigners (Gould and Klor 2015, Steinhardt 2018), worsen the image of affected regions and can lead to deteriorating economic conditions (Endrich and Michel 2018). Despite these costs, little systematic evidence on the determinants of hate crimes exists. Peculiar political events such as the terrorist attacks of 9/11 or political upheavals such as Trump's presidential campaign in the US seem to trigger surges in violence against foreigners (Gould and Klor 2015, Mueller and Schwarz 2019). The question remains why some regions are more prone to outbursts of xenophobic violence than others.

This paper contributes to the debate on the determinants of hate crimes. It demonstrates how the exposure to foreign television can lead to a lower inclination to commit acts of xenophobic violence. For the analysis, I look at one specific episode of surges in hate crimes, Germany in the years 2014 to 2017. A large influx of refugees since the beginning of the Syrian civil war in 2011 was accompanied by the rise of a new right-wing party and xenophobic demonstrations and attacks.[3] Violence against refugees occurred country-wide, but the Eastern regions in Germany, synonymous with the area of the former GDR, were particularly affected (Figure A1). It continues a pattern of xenophobic violence against foreigners in the Eastern part of Germany after reunification (Krueger and Pischke 1997).

Economic and cultural reasons are proposed to explain the susceptibility of the Eastern part of Germany to xenophobic violence. Some argue that the legacy of communism has led to different preferences in the former GDR compared to former West Germany (FRG) (Alesina and Fuchs-Schuendeln 2007).[4] While political attitudes are predicted to catch up within 20 to 40 years after the reunification, social norms appear more resistant to change (Brosig-Koch et al. 2011). Economic explanations relate to the turmoil after reunification. Inhabitants in

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[2] The results come from the Second European Union Minorities and Discrimination Survey (2017). It was conducted by the European Union Agency for Fundamental Rights.

[3] Other European countries such as Austria and Italy experienced similar surges in hate crimes and increases in the support for far-right parties.

[4] Research finds a legacy of the socialist state after reunification on preferences about the welfare state (Alesina and Fuchs-Schuendeln 2007), solidarity behavior (Brosig-Koch et al. 2011), social trust (Heineck and Süssmuth 2013), personality traits (Pannenberg et al. 2015), education and labor market outcomes (Fuchs-Schündeln and Masella 2016) and gender roles (Campa and Serafinelli 2019).

the area of the former GDR had to endure a period of economic hardship and degradation and such an experience can change preferences and incite xenophobic behavior (Falk et al. 2011).

How does foreign television play a role? Watching Western TV was a popular leisure activity in the GDR. The broadcasts covered foreign cultures and foreigners much more prominently than the national TV stations in the GDR. But geographical features only allowed some parts of the former GDR to receive the Western TV signal and excluded others from viewing Western broadcasts. I argue that the exposure had a positive impact on the sentiment towards foreigners. It manifested into long-lasting differences in xenophobia. These subsequently become relevant when anti-foreigner topics gain salience and result in diverging intensities of anti-refugee violence.

I exploit the exogeneity in the quality of the transmission signal as a natural experiment and analyze how the exposure to foreign television can lead to differences in xenophobia. Looking at a cross section of German municipalities in the area of the former GDR, I compile a dataset on violence against refugees from an online data repository for the years of 2014 to 2017. I find that regions that were exposed to Western TV show a significantly lower level of violence against refugees than municipalities without access to Western TV. The result is consistent across the different kinds of hate crimes, namely assaults, arson attacks against refugee homes and other attacks against refugee housing. The effect of Western TV is diminished in regions with a history of xenophobic attitudes. It suggests that a more positive predisposition to foreigners made viewers more receptive to the media exposure. Further, I find that it's the degradation of a municipality but not the economic situation per se that is associated with a higher level of hate crimes.

The findings complement a literature on the causes of social and political backlashes against minorities and immigration. Large scale immigration can activate anti-foreigner sentiments and lead to hostile reactions of the local population (Hangartner et al. 2019). But if there is frequent contact between locals and refugees, it can also increase tolerance (Gamalerio et al. 2018, Steinmayr 2016). Xenophobic violence becomes more likely when the cultural distance between the migrants and the local population is large (Tabellini 2018) and when the influx leads to a rapid compositional change in the population (Entorf and Lange 2019). An increase in the visibility of minorities from different ethnicities can lead to political extremism and assaults (Colussi et al. 2016). But violence against migrants is mitigated when government efficiency is high and integration is well organised (Ziller and Goodman, forthcoming). The influx of refugees to Germany between 2014 and 2017 provides one recent event that triggered anti-foreigner sentiments. I elaborate why this has led to different degrees in the outbursts of hate crimes across the Eastern part of Germany.

Cultural traits such as xenophobia exhibit remarkable persistence. Cantoni et al. (2019)

show how voting results for the NSDAP at the end of the Weimar Republic predict the vote share of the xenophobic German party AFD 80 years later. Anti-semitic norms have prevailed over centuries and fuel violence against jews (Voigtländer and Voth 2012). A history of right-wing voting is a good predictor for the propensity to cast a vote for parties with an anti-foreigner manifesto (Schwander and Manow 2017). One explanation for the persistence is the transmission of xenophobic traits across generations (Avdeenko and Siedler 2017). Past events such as the exposure to Western TV therefore can have long-lasting effects on attitudes.

Economic conditions are the alternative explanation for xenophobic outbursts. Economic crises can perpetuate racial animus, leading to an increase in hate crimes (Anderson et al. 2018). Right-wing violence occurs more frequently in times of high unemployment (Falk et al. 2011), and a perception of relative deprivation can motivate citizens to vote for right-wing extremist parties (Dorn et al. 2018). Dippel et al. (2015) find that an increase in trade exposure benefits extreme right-wing parties and that labor market adjustments are the driver behind the effect. The economic hardship in the eastern part of Germany after reunification and a perception of refugees as competitors on the labor market and for resources can make them targets of scapegoating. In the empirics I consider the possible confounding influence of economic factors.

There are only few studies that look at the association of media and hate crimes.[5] Ivandic et al. (2019) find that media reports on terrorist attacks trigger anti-migration sentiments and motivate local hate crimes against Muslims. The penetration of social networks can instigate ethnic hate crimes and lead to an increase in xenophobic attitudes (Bursztyn et al. 2019). Propagations of anti-foreigner sentiments through channels such as twitter can have real world repercussions and bring about attacks on the targeted minorities (Mueller and Schwarz 2019). The closest to our study is the work by Ralsmark (2017) who deals with the visibility of minorities on television and how this can affect social tolerance. She observes the visibility of people of color in US television and finds that a higher visibility leads to less hate crimes in the subsequent year. Her argument that the exposure to minority cultures increases social tolerance is similar to ours, but I measure the long-term effects of such exposure on the attitude towards a minority group.

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[5] The literature on media and political preferences is larger and shows how biased broadcasting can affect voting decisions (DellaVigna and Kaplan 2007) or how entertainment TV leads to larger support for populist movements (Durante et al. 2019). On media and criminal behavior, violent movies induce a short-term increase in violent crime (Dahl and DellaVigna 2009). The portrayal of different ways of life on television can affect fertility (La Ferrara et al. 2012) and the attitude and behavior related to women (Jensen and Oster 2009). Radio transmissions with nationalistic content can fuel ethnic animosities and, if used as a propaganda channel, can be instrumental in ensuring public support for dictatorial regimes (Adena et al. (2015), Vigna et al. (2014)). A government can use mass media as a coordination device in state-sponsored violence (Yanagizawa-Drott 2014).

A few others have used the same natural experiment to analyze the influence of Western TV on preferences and behavior after reunification.[6] Bursztyn and Cantoni (2016) examine consumption patterns of former GDR citizens and detect that the exposure to Western broadcasts has moved preferences towards products that were heavily advertised. Hyll and Schneider (2013) provide evidence that viewing Western television has led to different hedonistic, consumptive and wealth aspirations. The decades of communist experience coupled with no reception of Western TV can explain persistent differences in financial risk taking and in the rate of participation in the stock exchange (Laudenbach et al. 2018). Friehe et al. (2018) are interested in the long-lasting effect on criminal behavior and find that regions with access to Western TV exhibit less violent crime, sex crime and theft, but more fraud. Our project deals with a different kind of crime, namely xenophobic violence. The empirical framework will account for potential dependencies between crimes and xenophobia and for the other channels of influence.

Two studies argue that Western broadcasts have helped to create a democratic culture and to develop a political attitude closer to the Western system. Friehe et al. (2019) look at voting results after reunification and observe that regions with no Western TV reception come with a higher vote share for extremist parties. The effect is attenuated for parties on the political right. Hornuf and Rieger (2017) interpret the association of Western television and a larger vote share for right-wing parties as an indication that Western TV has led to less xenophobia. Their explanation is in line with my argument. However, this paper offers a more direct test of the argument. Hate crimes are an act of resentment against foreigners and represent a better proxy for anti-foreigner sentiment. The motivation for voting for a right-wing populist party can stem from economic and cultural reasons unrelated to xenophobia. One example is the expression of discontent with the reigning parties during economic crises (Funke et al. 2016). Hate crimes are hence more suited for answering the research question.

The paper is organised as follows. Section 2 elaborates on the historical and institutional background and develops the theoretical conjectures. Section 3 describes the data and sets up the empirical framework. Section 4 presents the results and section 5 concludes.

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[6] Others have used the framework to elaborate on the effect of Western TV on behavior in the GDR and find little evidence for an unstabilizing role during the breakdown of the regime or for triggering effects on anti-government protests (Kern and Hainmueller 2009, Crabtree et al. 2015)

2 Western TV and Hate Crimes - Institutional setting

This part elaborates on the design of the broadcasting system in the former GRD and the programming with regard to the visibility of foreigners and foreign cultures. I then describe the development of xenophobia in the former East Germany, offer theories that describe how television and xenophobia can be related and introduce the setting of the natural experiment.

2.1 Television in the GDR

After World War II, Germany was divided in two blocs that became the Federal Republic of Germany (FRG) and the German Democratic Republic (GDR). Travelling and personal interactions between the two entities were frequent in the beginning, but the border closure and construction of the Berlin Wall in 1961 set up a spatial and mental separation. Communication across borders became prohibited and the GDR governed the restrictions with an iron fist. As a result, the trade with the West in cultural goods such as books or music almost completely stopped. FRG broadcasting was the only exposure of GDR citizens to Western influence. Television became the window to the western world.

Regular broadcasting in the GDR started after a brief trial period in 1956 under the name of Deutscher Fernsehfunk (DFF). It initially sent out one program, but got expanded into two stations in 1969. Television quickly became a mass medium and in the beginning of the 1960s one million TV sets had been sold. In later periods over 95 percent of households reported having a television set and for a majority of citizens watching TV constituted their favourite leisure time activity (Hesse 1988). After 1969 most viewers could choose between at least five channels, including three from the FRG.

The DFF was a state controlled broadcasting system under the auspices of the governing party, the Socialist Unity Party (SED). The department of agitation in the central committee of the SED commanded the political control and often used television as an instrument of propaganda.[7] The programming of the television reflected the strong influence of the Soviet Union on the GDR. The second channel, for instance, often played Soviet movies and documentaries such as 'For friends of the Russian language'. The state tried to shield its citizens from watching Western broadcasts and to promote its own stations but remained largely unsuccessful. In

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[7] The constitution of the GDR contained no right to freedom of information. The DFF's mission was to strengthen the fraternal friendship with the Soviet Union in the greater struggle against the West and to build identification with the socialist state. No independent newspaper or radio broadcasts were available in the GDR.

the regions that received Western TV, a majority preferred the broadcasts from the FRG. The viewers also had low trust in the credibility of the news broadcast of the DFF in comparison with Western news (Hesse 1988).

The programming of the DFF covered mainly domestic issues and focused on accomplishments of the GDR and other socialist countries. Coverage of foreign cultures was minor. This remained the constant principle, even though the competition with Western stations led to a step wise internationalisation of the program in the 1980s and to the screening of some American and West European movies (Dittmar 2005). Still, even in the 1980s, West German TV stations exhibited a much larger share of broadcasts with foreign content than the Eastern counterparts (Hornuf and Rieger 2017).

Reunification led to the dissolution of the DFF in 1991 and the FRG stations became the official public broadcasting system. The regional stations MDR and RBB that are part of the Association of Public Broadcasting Corporations provide specific media coverage on the area of the former GDR.

2.2 Xenophobia in the GDR

Citizens in the GDR had little interactions with foreigners in comparison to the FRG. Travelling to countries outside of the Eastern Bloc was restricted with the exemption for an elite. In the GDR, foreigners consisted mostly of guest workers or personnel of the Soviet Army. Foreign workers got recruited on fixed-term contracts from countries such as Vietnam, Cuba and Algeria.[8] But personal contacts between locals and foreigners remained sparse. The guest workers had to live in separate housing, were restricted in their freedom of movement and required to move back to their home country after the contract ended (Behrends et al. 2003).

After reunification, a surge in hate crimes against foreigners was particularly endemic in the former part of the GDR (Krueger and Pischke 1997). East German cities such as Hoyerswerda and Rostock-Lichtenhagen gained prominence for xenophobic riots. Surveys confirm that areas in the former GDR showed a greater level of anti-foreigner sentiment (Krüger-Potratz 1991). But the xenophobia had precursors. Despite the self proclaimed image of an anti-fascist state, hostility against foreigners had been a recurring phenomenon since the beginning of the 1980s. Evidence is rare as the regime in the GDR suppressed information on xenophobic violence, but surveys reveal the negative opinion of citizens towards some foreigners. Indeed, the image of

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[8] At the high point at the end of the 1980s there were 60.000 guest workers from Vietnam and 15.000 from Mosambik in the GDR.

different nationalities corresponded with the portrayal of their nation in the East German state propaganda of the time (Friedrich and Schubarth 1991).[9]

2.3 TV and Xenophobia

How can the exposure to Western television affect the attitude of the viewers towards other nationalities? I rely on the *cultivation theory* and the *intergroup contact theory* from a literature in psychology to explain how television can lead to a dissemination of values in tolerance and instigate learning processes about foreigners.

According to the *cultivation theory*, the cumulative exposure to television can change moral values and the beliefs about the world. Television is said to create an artificial world that exposes its viewers to different realities (see, e.g. Gerbner et al. (2002)). Viewers distil information about different ways of life, use the portrayed characters as role models and absorb the expressed values into their own moral compass.

If the depiction of foreigners departs from previous experiences, the exposure can affect the attitude towards foreigners and the perception of their role in a society. The experience of GDR citizens and the depicted reality on GDR television was void of foreign influence. The society was homogeneous, the presence of foreigners was deliberately muted and foreign influence related if at all to life experiences in partner countries of the Eastern Bloc. In contrast, the popular entertainment and soap operas from the West represented the more diverse society of the FRG. FRG television frequently showed international imports.[10] The broadcasts transmitted a world view that assigned foreigners a prominent role in a society. Viewers of Western television became more open to foreign influence and the exposure led to an increase in social tolerance towards foreigners.

Complementary, exposure to others on television can lead to learning processes and mitigate biases. The *intergroup contact theory* tells us that the exposition to other groups can reduce intergroup prejudice (Williams 1947). Prejudice decreases when anxiety about future interactions with out-groups is lowered. Just as the personal contact between locals and foreigners can undo wrong beliefs and animosities, so can the exposition to other ethnicities on television decrease anxieties. The unbiased reporting on the minority, free expression and a fair representation are crucial factors for a tolerance-increasing exposure. Most often such unbiased

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[9] Information that could harm the GDR regime was commonly kept secret. The survey data by the Leipzig Institute for Youth Research on xenophobia fell under such a classification.

[10] The foreign shows had many viewers in the GDR, and US soap operas such as Denver were among the most popular broadcasts (Hesse 1988).

portrayal are achieved in a political context with a free press (Ayoub and Garretson 2017), something that stood in stark contrast to the institutional environment in the GDR.

The mission of the GDR television was to strengthen the bond to the communist regime. It portrayed Western cultures in a bad light and the coverage focused on failures of countries aligned with the 'class enemy'. The result was a nurturing of hostile attitudes towards foreigners. Western television on the other hand offered a culturally diverse programme with news and documentaries that often dealt with foreign cultures. At the same time it focused on the advantages of a globalised western world. One example is the coverage of the experience with guest workers in the FRG in the 1970s. It was covered in a better light in the Western media. While the FRG media emphasised their contribution to the economic miracle and painted a more positive picture of migrants in general, GDR television focused on the problems in the integration process.

Not all citizens express the same responsiveness to television. The success of propaganda depends on the predisposition of recipients. If the viewer is negatively predisposed, they are unlikely to believe the message and can be even dissuaded off the cause. Adena et al. (2015) show how broadcasting by the Nazi party NSDAP in the 1930s was persuasive in regions with historic anti-semitism, but led to the opposite effect in regions that were more friendly to jews. For our case, if a viewer carries a negative predisposition towards foreigners, she will be less responsive to images on Western TV and disregard new information on foreign cultures. A positive predisposition induces an openness to new influences and the exposure can persuade her of the advantages of a diverse society.

The evidence tells that the visibility of foreigners and the reporting on foreign cultures was much more pronounced and positive in the Western media. I expect, first, that citizens in regions that received Western TV show a lower inclination to commit hate crimes. Secondly, the effect of television depends on the predisposition towards foreigners. Regions that are historically less hostile to foreigners should experience a larger change in attitude.

2.4   Natural Experiment

The partial reception of Western TV in the GDR provides for a natural experiment to test the effect of television on xenophobic attitudes. Antennas along the FRG and GDR border as well as from the Western enclave in West Berlin sent a terrestrial signal that transmitted Western television. The quality of the transmission depended on the distance to the next transmitter combined with the topological features of the viccinity. Regions surrounded by mountains or located in a valley were vulnerable to distractions and break offs. Bursztyn and Cantoni (2016) apply an irregular terrain model that uses information on all antennas that transmitted the

main public TV stations in the FRG. They calculate the average strength of the TV signal for each municipality in the former GDR based on the municipality borders of 1997. I rely on their measurement and transform it by the population weight to the municipality borders of 2016.

Figure 1 depicts the signal strength on the municipality level. The region around Dresden in the South East and around Greifswald in the North East received the worst signal. As noted in many anecdotes, citizens in these vicinities could not view Western TV. I follow Bursztyn and Cantoni (2016) and use the signal strength of Dresden as the cut-off value for the assignment into a treatment and control group. TV signal quality falls discontinuously and the quality of reception does not react substantially to any variation in the signal if it is far from the cut-off level. Dresden was assumed to be close to the signal strength discontinuity. The Municipalities with a better signal strength than Dresden are assigned into the treatment group of *reception* of Western TV and with a worse or equal signal strength are in the control group of *no reception*.

Insert Figure 1 about here

The quality of the signal can serve as a natural experiment if the following preconditions are fulfilled:
(1) GDR citizens viewed Western TV
(2) The treatment and control region are comparable
(3) There was no spatial sorting

(1) GDR citizens viewed Western TV
The first necessary condition for identification is that citizens who received Western TV did view it. Authorities in the GDR failed to prevent the transmission of the Western broadcast and after 1973 FRG television even lost its official taboo.[11] Watching TV constituted the most preferred leisure activity in the GDR (Hesse 1988). On average households spent 28.6 hours per week on viewing television and this was consistent across different types of occupations (Hanke 1990).

Hesse (1988) conducted a survey with refugees from the GDR on their consumption of Western television (see Table 1). Among the subjects who lived in areas with Western TV reception, 82 percent viewed it every day. In regions where the signal was too distorted, nobody in the sample used the television daily and 53 percent did never watch it.

Insert Table 1 about here

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[11] In the beginning of the 1960s the GDR authorities planned to jam transmitters or remove parts of existing receivers to disturb the signal, but the envisaged protest of the public stopped the execution

A survey by the Zentralinstitut fuer Jugendforschung among GDR residents supports the popularity of Western TV. In the GDR districts with Western TV reception such as Magdeburg and Cottbus, the average respondent watched the broadcasts almost daily. In the district of Dresden where for most households the signal was too weak, 63.5 percent stated that they never watched Western television (Hennighausen 2015). The lack of foreign television did not lead to fewer purchases of TV sets, indicating that the citizens instead consumed GDR television (Bursztyn and Cantoni 2016).

The treatment and control region are comparable
The second assumption is that under a scenario of no Western broadcasts citizens in the treatment region would be no different to citizens in the control region. In the GDR, the uniform educational system and little parental influence on children's development resulted in homogeneous individual preferences (Hyll and Schneider 2013). The economic structure varied little between the treatment and the control region. Both had industrial centers with either Leipzig or Dresden and included parts characterised by agriculture such as the area around Schwerin for the control or around Greifswald for the treatment group. A comparison of indicators on the district level at the beginning of the GDR in 1950 and at the end in 1990 in Table 2 reveals that the two groups were almost indistinguishable from each other (Bursztyn and Cantoni 2016). The difference in the employment structure, population density and extent of retail sales does not reach a significant level and neither does the change over time in the indicators between the two groups.

Insert Table 2 about here

Socioeconomic characteristics in 1988 such as housing, education or the level of crime and the divorce rate show a high similarity and support the homogeneity assumption (Kern and Hainmueller 2009). Political attitudes before the introduction of Western TV did not differ, as measured by the voting results in 1946.

The homogeneity across the two groups until the end of the GDR suggests an analysis with data from right after reunification. However, the sample of hate crimes covers the years 2014 to 2017. Even though the similarity until 1990 suits the analysis, the economic turmoil after reunification hampers the empirical set-up. Mass layoffs and plant closures during the transition from the socialist to a market economy had massive effects and could have led to different regional developments. Table 3 presents regional characteristics for the two groups in the year 2013. The control group fared considerably worse since reunification. It performed significantly worse in Gdp per capita and in the unemployment rate, its share of high school drop outs was larger and the loss of inhabitants more pronounced. If these divergences influence xenophobia, our results on the long-term effect of Western TV could be biased. In the empirical analysis I mitigate the concern by including a battery of variables that cover for the different

economic, political and social developments.

Contact theory predicts that interactions with foreigners decrease hostility. Inflows of migrants after reunification could have led to a change in the degrees of xenophobia. But the effect depends on the favorability of the meeting conditions. While facilitated contact and little competition for local resources can alleviate negative sentiments, little contact and infrequent interactions do not lead to changes in attitudes (Gamalerio et al. 2018, Steinmayr 2016). Surveys report that regular contact with foreigners has picked up from a low level but remains far behind the level in the former Western part (Schmidt and Weick 2016). In the years after reunification, many foreigners in the Eastern part were refugees who were allocated to the region. Language and cultural barriers inhibited communication and interactions remained scarce. Our sample shows a proportion of only 1.17 percent foreigners for 2011 in the area of the former GDR compared with 8.6 percent in the Western part. Potential contacts with foreign tourists remain less likely in the East where in 2013 foreign tourists make up 7.9 percent of all tourists, or 0.15 foreign tourists per capita, compared with a proportion of 20.7 percent of all tourists or 0.38 foreign tourism per capita in the former West. In the empirics I account for the varying exposure in the regions to foreign citizens, refugees and tourism.

Spatial sorting

Another confounding factor is the possibility of spatial sorting. In the times of the GDR, viewers who preferred to watch Western TV could have migrated into regions with good reception. If they exhibited different xenophobic attitudes, this would bias the results of the natural experiment. But citizens in the GDR seldom moved. The centrally planned economy was based on low labor mobility. Regional specialisation limited the mobility of workers and a shortage in the housing market kept residential mobility at a low level. During the period of 1970 and 1990, only 2.5 percent of inhabitants moved places in a year, and in 1988 only 0.9 percent relocated across county borders (Bursztyn and Cantoni 2016, Hyll and Schneider 2013). These numbers are three times lower than for citizens of the FRG.

While spatial sorting in the GDR does not hamper with the empirical setting, the strong surge in migration after reunification can do. Borders opened in 1989, and in both 1989 and 1990 2.5 percent of the East German population migrated to the West (Hunt 2006). They consisted mostly of younger, well-educated citizens that were to a larger share female (Fuchs-Schündeln and Schündeln 2009). After the initial surge, the improvement in relative wages in the former East (Hunt 2006) quickly reduced internal migration (Chevalier and Marie 2017), though the out-flow increased again in the late 1990s. Importantly, at least for the beginning years migration rates were statistically similar across the treatment and control regions, a result that is consistent across the different age groups (Bursztyn and Cantoni 2016). The

fact that East Germans continue to show a low inclination to geographical mobility (Boenisch and Schneider 2013) further mitigates the risk of biases from spatial sorting. In the empirical framework I take into account the potential effect of differences in population losses. It does not offer a complete relief from the problem of spatial sorting though as the type of people that migrated is not observable. A bias from compositional changes could arise if regions with Western TV experienced less out-migration of people with little xenophobic attitudes or became attractive destinations for in-migration of such individuals.

3 Empirical specification and Data

3.1 Data

The best data to test the theories presented would be individual information on xenophobic sentiments across the area of the former GDR. I am not aware of such data that allows a convincing measurement of anti-foreigner sentiments. The project therefore relies on data on the number of hate crimes collected at the lowest possible administrative level. The municipality is the lowest administrative unit in Germany, situated below the State and the county level. In 2016, the area of the former GDR was divided into six States, 80 counties and 2663 municipalities. It has a population of 12.5 million, excluding Berlin, and the municipalities vary in size between 34 and about half a million inhabitants. Before reunification, the GDR consisted of 14 districts and 216 counties and had, excluding East-Berlin, 14.8 million inhabitants.

Germany between the years 2014 and 2017 offers a nice case study on xenophobic violence. A large influx of refugees since the beginning of the Syrian civil war in 2011 has led to a drastic increase in xenophobic demonstrations and attacks and the rise of a new right-wing party. The NGOs *Amadeu Antonio Stiftung* and *Pro Asyl* keep track of violence and social unrest aimed at refugees. They provide an online data repository on all incidents that is freely accessible. Each incident is manually coded and includes information on the timing, the location of the event, the source of the information and if applicable the report and the number of victims. The source of the data are publicly available reports from the media, the police and from state institutions. The data collection started in 2014.

The xenophobic activities are categorized into assaults, arson attacks, miscellaneous attacks against refugee housing and xenophobic demonstrations. I aggregate assaults, arson attacks and attacks against housing into a hate crime indicator. Anti-refugee incidents do not appear in the database when they cannot be attributed to one of the four categories or when there is no public information. This means that the data is not a complete representation of all hate

crimes against refugee and accounts only for a small part of all right-wing crime.[12] There is no reason to expect differences in the spatial coverage of hate crimes across Germany. Henceforth, the indicator of hate crimes against refugees represents a good proxy for the overall extent of xenophobic violence.

Hate crimes against refugees surged in the autumn of 2014, reached a peak in 2016 and declined afterwards (Figure 2). I collect the data on hate crimes from the data repository between October 2014 until the end of 2017 and aggregate it on the municipality level. The sample includes 4,715 cases of miscellaneous attacks, 968 assaults and 272 arson attacks. Figure 3 shows the spatial distribution of hate crimes by municipality for the region of the former GDR, normalized per 100.000 inhabitant.

Insert Figure 2 about here

Insert Figure 3 about here

The largest rate of hate crimes happened in the municipality of Bad Gottleuba-Berggießhübel in Saxonia, followed by Guben and Freital. The majority of municipalities did not experience any hate crimes. One explanation for the zero counts is the fact that the allocation quota of refugees by the state authorities depends on the number of inhabitants. Municipalities with low population numbers did not get assigned any refugees. As the presence of refugees and their housing is a necessary condition for the crimes to take place, I restrict the sample to municipalities that have more than 5000 inhabitants. This leaves us with 510 municipalities of which 175 have zero hate crimes as shown in Figure A2. In the empirics I will apply models that consider the excess number of zeroes.

A municipality is considered as treated if the signal strength of Western TV was better than the signal strength in Dresden. 460 municipalities belong to the treated group and 50 municipalities to the control group. Regions without access to Western TV experienced on average 9.53 hate crimes per 100.000 inhabitants. Regions with Western TV exposure had a lower level of 5.68 criminal incidents, a difference in the rate that is statistically significant. The different degrees indicate a long-term effect of Western TV on xenophobia. But even though the regions were homogeneous during the times of the GDR, the different development since reunification can bias the results and I control for it by using a battery of variables.

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[12] According to the German Federal Criminal Police, Germany experienced on average 22,345 cases of right-wing crime per year in the period of 2015 to 2017. The average in the sample from the online repository for Germany is at 1948 incidents per year over this period.

Covariates

The control variables belong to the characteristics of the municipality, the economic and social circumstances, the presence of foreigners and cultural factors. If not mentioned differently, the data comes from the Federal Statistical Office of Germany (*destatis*) and is on the municipality level for the year 2013, one year before the upsurge in hate crimes. All data is adjusted by population weights to the municipality borders of 2016.

The first set of control variables captures the characteristics of the population and the municipality. I use the density of the geographical unit to estimate if more densely populated areas exhibit a larger rate of hate crimes. Young people are more prone to commit violent crimes and I include the proportion of the population below 25 years. The effect of religious affiliations is ambiguous. On the one hand, the doctrines of the two main religions Catholicism and Protestantism refer to the necessity to help others in need. It predicts a more welcoming reception of refugees and less xenophobic violence in religious areas. But intergroup bias theory tells us that identification with a local religious group can lead to derogations of people who are part of an out-group (LaBouff et al. 2012). Most refugees came from muslim majority countries. I control for religiosity by the proportion of the population that are Catholics or Protestants and the data comes from census data in 2011. It is not possible to account for the intensity of religious belief, which could be stronger for the minority group of Catholics.

An economic explanation for hate crimes relates to competition on the labor market and for resources. Locals can regard refugees as competitors especially for jobs with low human capital requirements. I expect a harsher reaction in regions with less educated inhabitants. The proportion of high school drop outs covers for the educational attainment and the data is from the 2011 census and available at the county level. A worse economic situation dampens the labor market and can lead to a stronger competition for resources. One recurse is violence against out-groups such as refugees (Krueger and Pischke 1997, Falk et al. 2011). To control for conditions on the labor market, I include the unemployment rate and the unemployment rate of inhabitants under 25 which come from the Federal Employment Agency of Germany. GDP per capita and the share of welfare recipients cover for the general economic conditions and are provided on the county level.

The well-being depends not only on the personal economic situation but on the economic and social development of the surroundings. The area of the former GDR faced a large out-migration to the West. Population loss leads to the depletion of public and private services in the affected regions and can nurture a feeling of exclusion. I look at the population change between 1997 and 2013 as a proxy for the relative deprivation of a municipality. There is a large variation in the change in population, ranging from a loss of 41 percent for the municipality of Weißwasser to an increase of 123 percent in Glienicke. The occurrence of hate crime can as well depend on the general level of crime, and crime data on the county level comes from the

German Federal Criminal Police. Friehe et al. (2018) show that crime is significantly higher in regions without former reception of Western TV, and including general crime as a control allows to distinguish the results from this confounding factor.

Intergroup contact theory predicts that the exposure to foreigners and the quality of interactions can reduce ethnic intergroup prejudice and xenophobia. I use information on the proportion of foreigners who lived in a municipality before the beginning of the refugee crisis from the census data 2011. Data on the number of foreign tourists in 2013 is on the county level and normalized by the population. The unemployment rate of foreigners proxies for the integration success of foreigners and comes from the Federal Employment Agency of Germany. A better integration of foreigners leads to a lower probability of negative sentiments. The influx of refugees during the migration crisis led to a rapid compositional change for some regions which can fuel animosity among the residential population (Entorf and Lange 2019). I use the change per capita in the number of refugees between 2015 and 2017 on the county level.

Last, cultural traits such as xenophobic attitudes exhibit a remarkable persistence and are prone to be triggered by events such as the refugee crisis (Voigtländer and Voth 2012, Cantoni et al. 2019). I control for such legacies by measuring the vote share of the party NSDAP in the year 1932 (Falter and Haenisch 1990).[13] Another historical event that can reflect political preferences of former GDR citizens are the protests before the break-down of the GDR regime. Crabtree et al. (2015) provide information on protest events for the year 1989 on the county level for the former GDR.

Table A1 shows the correlation matrix for the outcome variable and all controls. Our outcome rate of hate crimes has a strong negative correlation with Western TV. Additionally, the rate of hate crimes is negatively correlated with population change, while there is a positive correlation with the unemployment rate and its sub-indicators for the young and foreigners. The evidence points in the direction of a negative effect of Western TV on xenophobic violence. But we observe that regions that had no Western TV reception have a higher unemployment rate and more welfare recipients but also more foreign tourists. If these variables affect the rate of hate crime, it will distort the evidence on the effect of Western TV. A regression model helps to take account of the confounding factors.

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[13] The election of 1932 is regarded as the last election that was conducted under free circumstances in contrast to the election in 1933 that brought the NSDAP into power.

3.2 Empirical specification

The theory predicts that Western TV has a negative long-term effect on the number of hate crimes. Hate crimes are count data and I normalize them by 100.000 inhabitants to make the incidents comparable across municipalities. I use a Poisson regression to estimate the determinants of the rate of xenophobic violence. The Poisson regression is typically used for count variables, but can account for the rate of incidents. The number of incidents of hate crime H_m in municipality m between the years 2015 and 2017, depending on the size of the population n_m, is expressed as

$$H_m(n_m) = Poisson(\bar{\lambda}_m n_m) \tag{1}$$

14

The conditional mean of the rate of violence against refugees is given by $\bar{\lambda}$ and is specified as

$$log(\bar{\lambda}_m) = log(m_n) + \beta_0 + \beta_1 WesternTV_m + X'_m \psi + \phi_b + \varepsilon_m \tag{2}$$

The main explanatory variable of interest is $WesternTV$. The dummy variable is equal to one for a municipality that received Western TV during the times of the GDR and zero otherwise. The coefficient β_1 tells by how much the rate of xenophobic violence differs for municipalities with Western TV and is the percentage difference in the rate of hate crime. X_m is a vector of covariates. I include State fixed effects ϕ_b to take account of any state specific factors that could affect the occurence of hate crimes. As the interest is in the rate of hate crimes, I add the log of population size of a municipality $log(m_n)$ as an offsetting factor to the estimation.

The Poisson model assumes that the conditional variance and the conditional mean of the dependent variable are equal,

$$E(H) = Var(H) = \lambda \tag{3}$$

The hate crime indicator shows a dispersion of 3.77. As it is significantly different from the equi-dispersion at a value of zero, the restrictive condition is not fulfilled. Under over-dispersion, the Poisson quasi-maximum likelihood estimation provides for a consistent and

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[14] The Poisson probability specification is given by $P(\lambda) = \frac{e^{-\lambda_m}\lambda_m^{h_m}}{h_m!}$ where $\lambda_m = X_m\beta$

efficient estimator of the conditional mean as long as the conditional mean is correctly specified. This is true even when the data-generating process is not following a Poisson distribution (Wooldridge 1999). It estimates a dispersion parameter δ^2 in $Var(h|x) = \delta^2 E(h|x)$ that for $\delta^2 = 1$ is just the assumed variance in the Poisson model. The quasi-maximum likelihood estimator includes robust standard errors clustered at the municipality level.

The outcome variable hate crime per capita exhibits an excess number of zeroes that can be larger than the Poisson model predicts (see Figure A2). Zero-inflated models supplement the basic count models with a binary process that helps to model the excessive number of zeros. I apply the zero-inflated Negative Binomial model as it takes into account the issue of over-dispersion.

Large economic and political changes after the breakdown of the Wall can affect the level of xenophobia. The battery of covariates aims to mitigate the concern. In one extension I include county fixed effects which provides for a conservative test of our theory.

In order to understand who was most affected by the exposure to Western TV, the following estimation includes the conditioning effect of xenophobic predispositions. According to the prediction, the effect should be weaker for regions who exhibited stronger xenophobic sentiments before the introduction of Western TV. The vote share of the NSDAP per municipality in the 1932 elections proxies for long-term cultural sentiments towards foreigners and is interacted with the $WesternTV$ dummy.

$$log(\bar{\lambda_m}) = log(m_n) + \beta_0 + \beta_1 WesternTV_m + \beta_2 nsdap_m + \beta_3 WestTV_m * nsdap_m + X'_m \psi + \phi_b + \varepsilon_m \tag{4}$$

The coefficient β_3 tells if regions that had a weaker predisposition to xenophobia were more strongly affected by the appealing effect of Western TV.

4   Results and discussion

The theory predicts that hate crimes occur less often in the treated municipalities that were able to receive Western TV. Table 5 presents the result of the regressions. Regression (1) starts with variables for the characteristics of the municipality and step by step I add the controls for the characteristics of the population and the economic situation (2), the presence of foreigners and their integration success (3) and long-term cultural factors (4). Across all specifications the treated municipalities exhibit a significantly lower rate of hate crimes than the control regions.

In the fully specified model (4), a municipality that received Western TV experienced a 52 percent lower rate of hate crimes.

Insert Table 5 about here

Municipalities that have a larger proportion of Catholics experience less hate crimes against refugees. It seems that in the context of the refugee crisis in Germany, a larger role for Catholics leads to more social tolerance towards refugees. I find limited support for an economic explanation of hate crimes. Economic prosperity measured by gdp per capita, the proportion of welfare recipients and the general unemployment rate do not explain the variation in xenophobic activity. Only the unemployment rate of inhabitants under the age of 25 is positive and weakly significant, suggesting that some of the young are most strongly involved in hate crimes.

The picture is different for the degradation of a municipality over time. For a municipality that had to endure a higher loss of inhabitants, the rate of hate crimes is significantly larger. It suggests that it is not the economic situation per se that leads to repercussions against refugees but the relative feeling of deprivation and exclusion. The finding that the crime rate per capita is negatively related to the number of hate crimes underlines the different nature of xenophobic violence compared to other crimes.

The long-term number of foreigners living in a vicinity, the change in the influx of refugees and the number of foreign tourism appear to have no relation to xenophobia. Interestingly, the higher the unemployment rate among foreigners, the stronger the hostility. Tolerance seems not to depend on the frequency in contacts with foreigners but on the quality of the interaction and the perception of their integration effort.

The historical voting record for the NSDAP as a proxy for long-term cultural traits has no predictive power to explain violence against foreigners today. Neither does the number of protests in 1989 predict the level of hostility towards refugees.

In Table 6 I distinguish between the different categories of hate crimes. The result for the long-term effect of Western TV is consistent for minor attacks against refugee housing (1), assaults (2) and arson attacks against refugee homes (3). The treatment regions with Western TV perform much better with regard to xenophobia than the control regions. The magnitude of the effect varies between 48 per cent for miscellaneous attacks and 68 per cent for arson attacks. The effects of the confounding factors vary a bit across the different categories, but they are mostly in line with the results of the aggregated indicator. Assaults occur more often in municipalities with a lower share of high school drop outs. Arson attacks happen more often in less densely populated areas, are committed by populations characterizied by a larger share of young inhabitants and less welfare recipients and occur in municipalities with lower levels of foreign tourism.

Insert Table 6 about here

Xenophobic demonstrations provide one additional category of xenophobic expressions. Regions that received Western TV exhibit a significantly smaller rate of demonstrations aimed at refugees, supporting the argument of a lower level of xenophobia. Further, in municipalities with higher educational attainment xenophobic demonstrations happen more often.

In the next step, Figure 4 presents the marginal effect of Western TV on hate crimes depending on the level of pre-existing xenophobia. For a municipality with a relatively low percentage of votes for the NSDAP in the election of 1932, the effect of Western TV is significant and negative, while for municipalities with a large vote share for the NSDAP Western TV had no or even a positive effect on hate crimes. Apparently Western TV was only effective in diminishing the hostility against foreigners in regions with little history of xenophobia. Recipients who have a stronger xenophobic predisposition got less convinced by the imagery of the West.

Insert Figure 4 about here

As of now the regressions use fixed effects for the States. A more conservative approach applies county fixed effects for the 76 counties in the region of the former GDR. It allows to see if municipalities within a county differ in xenophobia along the dimension of Western TV reception, but comes at the costs of less variation in the outcome variable. Table A2 shows that even under these strict restrictions, the long-term effect of Western TV remains significant. While the negative effect of a population loss remains significant, the influx of refugees and the number of foreign tourists now lead to more social tolerance towards refugees. For the population indicators, areas with better educated inhabitants but plagued by higher unemployment are associated with a larger number of xenophobic incidents.

The descriptives show that we are dealing with an excess number of zeroes in the observations on hate crimes. The zero inflated Negative Binomial model explicitly models the probability that any hate crime is committed. Using the same determinants for both stages, in Table 7 we can observe that Western TV is a strong negative predictor for the number of incidents but has no effect on the binary stage of hate crimes. Population loss is again a strong predictor for the likelihood of hate crimes and for a larger number as is the unemployment rate of foreigners.

Insert Table 7 about here

5 Conclusion

Media can change the attitude towards minorities, affect voting decisions and induce criminal behavior. This study shows the long-term effect of television on xenophobic violence. Using the upsurge in hate crimes in Germany during the migration crisis as a case study, we detect that municipalities that received Western TV in the GDR show a lower level of violence against refugees than regions that were excluded from the reception. Even though the times of the GDR are far gone, the long-term exposure to foreigners and foreign cultures on Western TV has led to long-lasting differences in the attitude towards foreigners. Events such as the large influx of migrants can act as a trigger to bring out such predispositions.

The observation of such long-term trends merits consideration. One suggestion for improvement is the usage of data on hate crimes from the beginning of the 1990s from right after reunification. Official information from state authorities or the collection of news reports on xenophobic violence through a media analysis in line with Krueger and Pischke (1997) and Endrich and Michel (2018) are the potential sources for such data. An alternative is to work with data on the individual level from surveys. The analysis provides for a new explanation for the large differences in the degrees of hate crimes in the area of the former GDR. It can inform policy makers about locations that are vulnerable to xenophobic outbursts and help in targeting policies that combat xenophobia.

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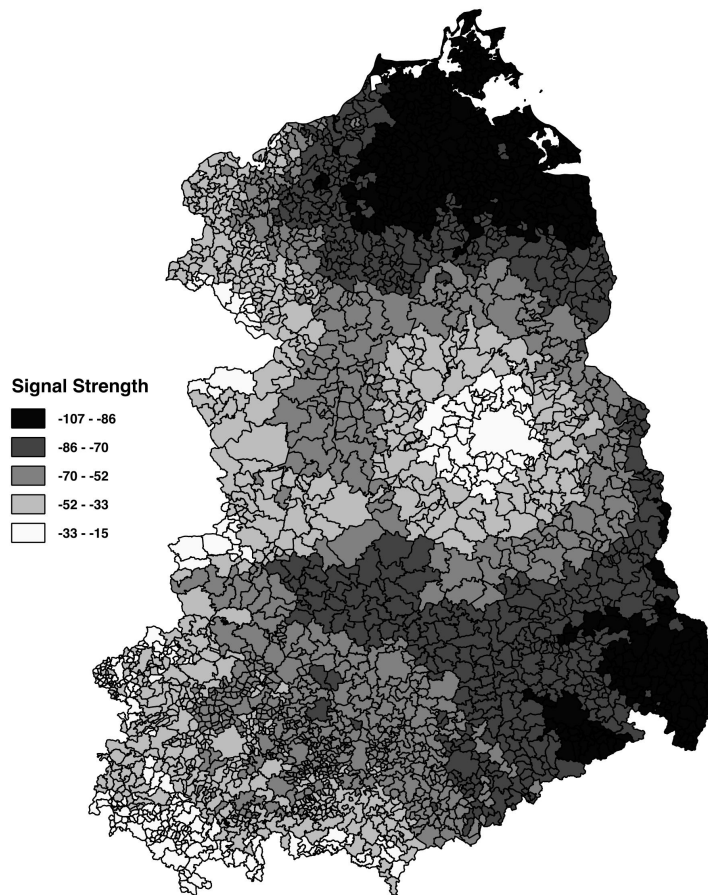
Figure 1: Signal Strength Western TV in the former GDR area

Signal Strength of Western TV reception in the area of the former GDR. Borders are at the municipality level of 2016.

Table 1: Frequency of Watching Western TV

Frequency	Reception of Western TV possible (in %)	Reception of Western TV Impossible (in %)
almost every day	82	-
often	12	-
sometimes	5	5
rarely	1	42
never	-	53

Survey among 205 refugees from the GDR, 162 from regions with reception of West TV and 43 from regions with no reception (Hesse 1988).

Table 2: Data comparison GDR districts

variable	signal_mean	nonsignal_mean	dif	st.error	p_value
year 1955					
Population density	206	202	4	77	0.959
Share of employed in agriculture	23.7	27.8	-4.1	11.1	0.744
Share of employed in industry	34.1	28.7	5.4	10.0	0.635
Retail sales per capita	1691	1694	-3	102	0.979
Savings per capita	277	297	-20	28	0.544
year 1990					
Population density	181	176	5	62	0.941
Share of employed in agriculture	13.5	11.3	2.2	5.1	0.706
Share of employed in industry	33.2	39.5	-6.3	7.5	0.479
Retail sales per capita	7577	7250	327	188	0.190
Savings per capita	9312	9381	-69	928	0.946
Cars per capita (1000)	237.4	237.6	-0.2	12.1	0.992
change 1955 - 1990					
Population density	-19	-26.2	8.2	15.4	0.626
Share of employed in agriculture	-14.5	-12.6	-1.9	6.0	0.778
Share of employed in industry	5	5.5	−0.5	3.0	0.870
Retail sales per capita	5862	5557	305	157	0.142
Savings per capita	8946	8994	-48	770	0.954

The data is on the district level of the fomer GDR and comes from GDR statistical yearbooks (Krueger and Pischke 1997).

Table 3: Regional Characteristics in 2016 by treatment status

variable	signal_mean	nonsignal_mean	Difference	st.error	p_value
Unemployment rate	0.12	0.15	-0.04	0.01	0.00
Unemployment rate foreigners	0.24	0.27	-0.03	0.02	0.13
Unemployment rate young	0.12	0.14	-0.03	0.01	0.01
Crime per capita	0.07	0.07	-0.004	0.002	0.03
Density	254.89	390.04	-135.15	59.15	0.03
△refugee per capita	0.01	0.01	0.001	0.0003	0.002
Foreign tourists per capita	0.25	0.48	-0.23	0.06	0.001
GDP per capita	23,086.03	22,344.74	741.29	384.59	0.06
Share inhabitants below 25	0.19	0.19	-0.001	0.003	0.65
Share high school drop outs	0.03	0.03	-0.003	0.001	0.02
Vote Share of NSDAP in 1932	0.38	0.36	0.02	0.01	0.01
Number of Protests 1989	3.08	3.12	-0.05	1.16"	0.97
Population change	-0.09	-0.15	0.06	0.02	0.001
Share Catholics	0.04	0.05	-0.02	0.01	0.17
Share Protestants	0.19	0.18	0.01	0.01	0.26
Share foreigners	0.01	0.01	-0.001	0.001	0.37
Share welfare recipients	0.01	0.02	-0.003	0.0004	0.00

Note: The sample consists of municipalities with more than 5000 inhabitants and excludes the area of the former East Berlin. Treated regions were able to receive Western TV in the times of the GDR. Share of Catholics, share of protestants and share of foreigners are from the year 2011. Population change covers the percentage change in population between the years 1997 and 2016
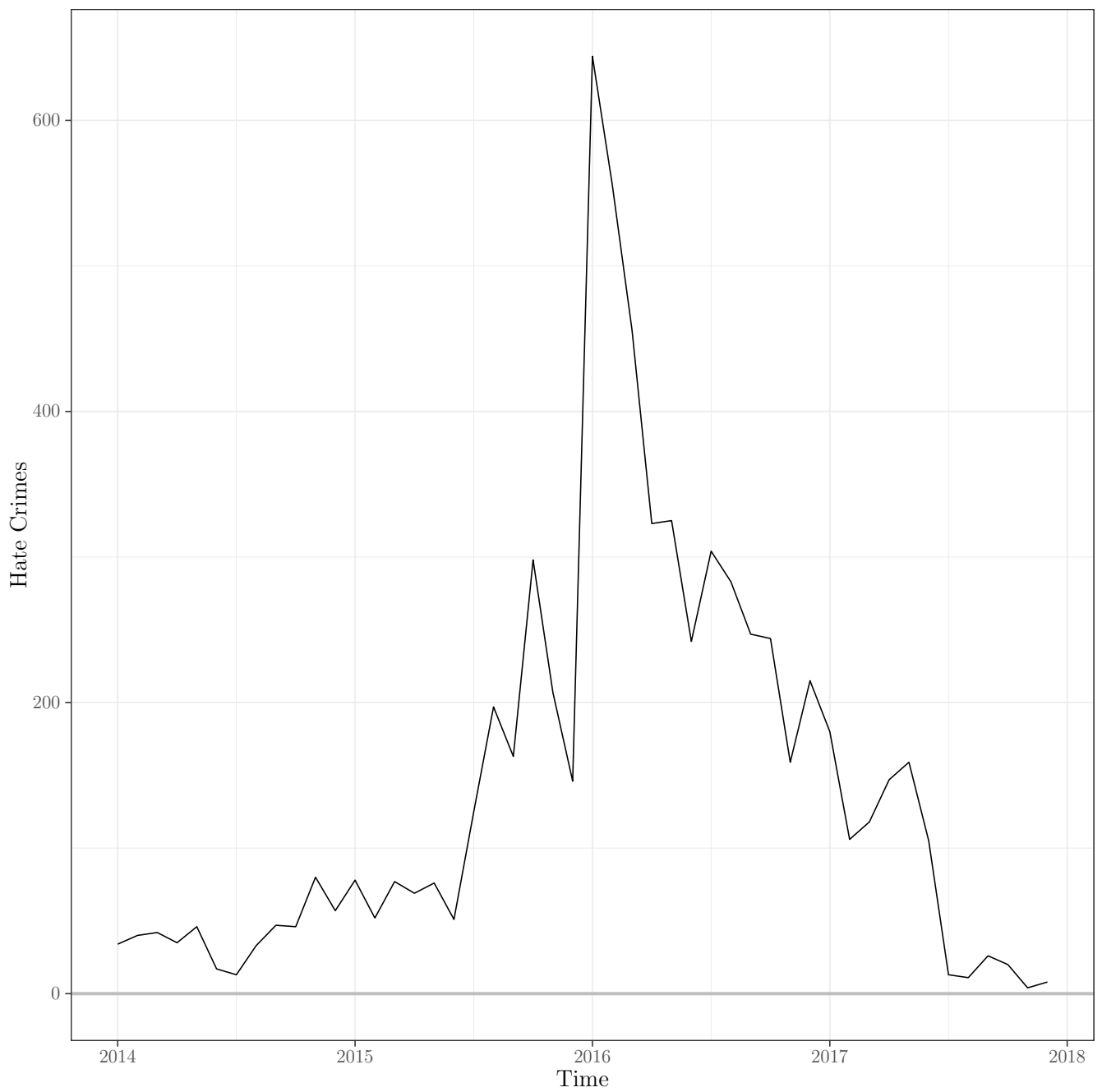
Figure 2: Development of Hate Crimes

Hate crimes against refugees over the years October 2014 until 2017 for the area of the former GDR. The data is aggregated on the monthly basis.
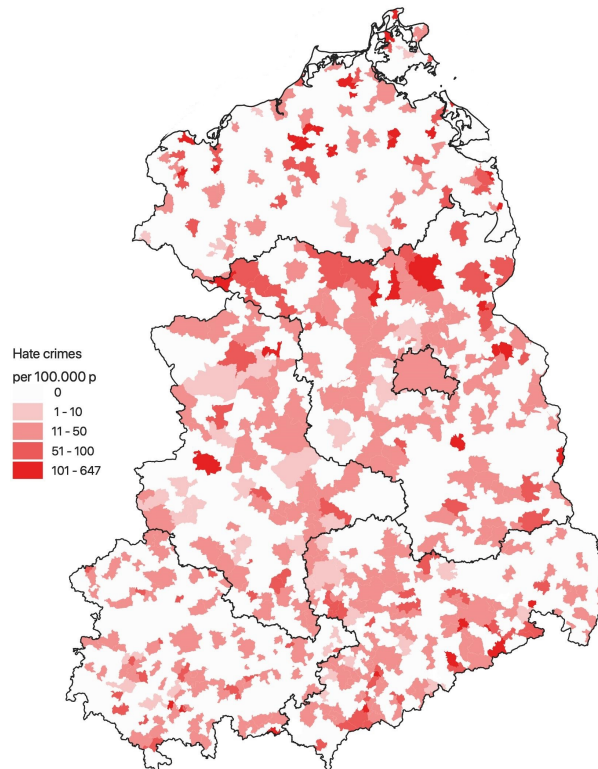
Figure 3: Hate Crimes per 100.000 inhabitants on Municipality Level, 10/2014 - 2017

Hate crimes against refugees per 100.000 inhabitants at the municipality over the years October 2014 until 2017 for the area of the former GDR.

Table 4

Statistic	Mean	St. Dev.	Min	Max
Western TV	0.10	0.29	0.00	1.00
population change	−0.10	0.18	−0.41	1.23
population	19,204	43,269	5,004	581,980
density	268.14	317.50	19.27	2,652.28
vote share NSDAP	0.38	0.07	0.12	0.55
unemployment rate	0.12	0.04	0.04	0.31
unemployment rate young	0.12	0.04	0.01	0.29
unemployment rate foreign	0.24	0.15	0.00	1.00
share catholics	0.04	0.06	0.01	0.80
share protestant	0.19	0.09	0.04	0.63
gdp per capita	23,013.35	3,329.50	18,056.00	36,592.00
share welfare recipients	0.004	0.002	0.002	0.01
foreign tourism per capita	0.27	0.25	0.03	1.46
△refugee per capita	0.01	0.003	−0.0005	0.03
crime per capita	0.07	0.02	0.04	0.14
share population <25	0.19	0.02	0.14	0.29
share drop outs	0.03	0.01	0.02	0.05
hatecases	3.99	9.89	0.00	135.00
miscellaneous cases	2.63	6.65	0.00	80.00
arson attacks	0.16	0.51	0.00	5.00
assaults	1.20	3.46	0.00	50.00
demonstrations	0.45	1.80	0.00	29.00

Note: Data on municipalities with more than 5000 inhabitants, 510 observations.

Table 5: Cross-Section Quasi Poisson

	Dependent variable:			
	(hatecases)			
	(1)	(2)	(3)	(4)
Western TV	−0.540**	−0.540***	−0.698***	−0.719***
	(0.223)	(0.195)	(0.211)	(0.204)
density	−0.0002	0.0001	−0.00005	−0.0002
	(0.0001)	(0.0002)	(0.0002)	(0.0002)
share population <25		3.117*	2.941	2.528
		(1.770)	(1.808)	(1.778)
share catholics		−2.467*	−2.733*	−3.200**
		(1.404)	(1.517)	(1.468)
share protestants		−1.126	−1.129	−0.734
		(0.768)	(0.824)	(0.765)
share drop outs		−19.925	−18.477	−17.043
		(12.524)	(12.378)	(12.053)
log(gdppc)		0.885*	0.969**	0.693
		(0.455)	(0.419)	(0.453)
crime per capita		−11.715***	−11.691***	−15.361***
		(3.462)	(3.661)	(4.611)
share welfare recipient		12.406	3.049	10.498
		(18.277)	(20.038)	(21.221)
unemployment rate		3.089	1.217	0.988
		(2.682)	(2.943)	(3.026)
unemp. rate young		3.969	4.244*	4.569*
		(2.623)	(2.572)	(2.616)
population change		−1.876***	−1.574**	−1.702***
		(0.605)	(0.633)	(0.588)
share foreigner			3.693	7.021
			(7.166)	(6.949)
unemp. rate foreigner			1.137***	1.054**
			(0.441)	(0.429)
foreign tourism per capita			−0.253	−0.188
			(0.182)	(0.174)
difference refugee per capita			6.553	4.745
			(12.464)	(11.091)
vote share Nsdap				−1.533
				(1.147)
protests 1989				0.010
				(0.008)
Constant	−7.694***	−17.128***	−17.801***	−14.244***
	(0.294)	(4.681)	(4.307)	(4.906)
Observations	510	510	510	510

Note: Standard errors are heteroskedasticity robust and clustered at municipality level. The unit of observation is the municipality. Significance at *p<0.1; **p<0.05; ***p<0.01

Table 6: Cross-Section Quasi Poisson. Subcategories

	Dependent variable:			
	(misc)	(assault)	(arson)	(demonstration)
	(1)	(2)	(3)	(4)
Western TV	−0.651***	−0.828***	−1.164***	−0.802***
	(0.227)	(0.240)	(0.340)	(0.306)
density	−0.0002	0.0001	−0.002***	−0.001
	(0.0003)	(0.0003)	(0.001)	(0.0004)
share population <25	2.005	2.690	8.511*	1.585
	(2.190)	(2.865)	(4.684)	(4.706)
share catholics	−3.221**	−3.151	−3.260	−1.688
	(1.353)	(2.699)	(2.180)	(2.365)
share protestants	−0.558	−0.770	−2.007	0.095
	(0.866)	(1.062)	(2.280)	(1.487)
share drop outs	−14.768	−27.343*	12.865	−72.390***
	(12.907)	(15.246)	(30.357)	(26.222)
log(gdppc)	0.528	0.954	1.615	−1.513
	(0.515)	(0.588)	(0.983)	(0.942)
crime per capita	−16.938***	−13.505**	−7.490	−0.398
	(5.022)	(6.482)	(16.264)	(10.139)
share welfare recipients	18.530	16.582	−201.653***	−44.331
	(23.468)	(27.717)	(64.090)	(71.225)
unemployment rate	−1.670	7.595*	3.900	−0.571
	(3.193)	(3.934)	(7.975)	(6.462)
unemployment rate young	6.884**	−0.612	1.482	9.807
	(2.841)	(3.329)	(6.939)	(6.228)
population change	−1.621**	−1.997***	−0.570	−1.351
	(0.691)	(0.753)	(1.300)	(1.128)
share foreigner	8.173	8.940	−19.481	22.589
	(7.666)	(8.504)	(16.152)	(19.512)
unemployment rate foreign	1.217***	0.645	1.259	0.946
	(0.437)	(0.678)	(0.846)	(0.770)
foreign tourism per capita	−0.120	−0.210	−0.889*	−0.011
	(0.192)	(0.253)	(0.466)	(0.328)
△refugee per capita	14.743	−20.851	5.104	9.253
	(12.445)	(15.975)	(34.152)	(27.496)
vote share NSDAP	−2.016	−0.173	−2.386	−2.490
	(1.264)	(1.551)	(2.668)	(2.247)
protests 1989	0.009	0.013	0.013	0.008
	(0.010)	(0.011)	(0.023)	(0.014)
Constant	−12.969**	−18.344***	−25.837**	6.246
	(5.548)	(6.264)	(10.366)	(9.805)
Observations	510	510	510	510

Note: Standard errors are heteroskedasticity robust and clustered at municipality level.
The unit of observation is the municipality. Significance at *p<0.1; **p<0.05; ***p<0.01

Table 7: Zero Inflated Neg. Bin.: Count Model Coefficients

	Dependent variable:		
	hatecases		
	(1)	(2)	(3)
Western TV	−0.605**	−0.522**	−0.550**
	(0.235)	(0.256)	(0.235)
density	−0.00002	0.0002	0.0001
	(0.0002)	(0.0002)	(0.0002)
share population <25		4.836	5.203
		(4.705)	(3.469)
share catholics		−0.475	−0.965
		(0.870)	(0.848)
share protestants		−0.280	0.208
		(0.993)	(0.731)
vote share NSDAP		1.134	−1.365
		(9.467)	(9.409)
log(gdppc)		0.500	0.736*
		(0.450)	(0.376)
crime per capita		−6.103	−9.386**
		(4.691)	(4.076)
share welfare recipients		−3.817	2.872
		(18.525)	(19.470)
unemployment rate		4.682*	2.332
		(2.691)	(2.626)
unemployment rate young		2.374	3.307
		(2.469)	(2.348)
population change		−1.954***	−1.634***
		(0.600)	(0.572)
unemployment rate foreign			1.618***
			(0.449)
foreign tourism per capita			−0.213
			(0.194)
△refugee per capita			10.381
			(11.426)
Constant	−7.794***	−14.434***	−16.907***
	(0.235)	(4.803)	(3.740)
Observations	510	510	510
Log Likelihood	−1,037.883	−967.493	−953.669

	Zero Inflation Coefficients		
	(1)	(2)	(3)
Western TV	−6.461	−4.169	−5.115
	(1.929)	(8.324)	(4.985)
density	−0.018**	−0.005	−0.063
	(0.008)	(0.014)	(0.048)
share population <25		−296.121**	−496.645***
		(149.96)	(93.262)
share catholics		110.348***	125.323
		(149.46)	(87.581)
share protestants		40.976*	72.198***
		(23.203)	(16.554)
share drop outs		−0.845	−71.082
		(527.07)	(253.130)
log(gdppc)		6.613	26.718
		(37.438	(22.528)
crime per capita		52.090	110.536
		(65.974)	(116.740)
share welfare recipients		−127.854	−141.529
		(1260.00)	(220.650)
unemployment rate		49.944	−157.653**
		(46.560)	(66.354)
unemployment rate young		−44.365	112.268***
		(36.652)	(31.919)
population change		47.573**	53.303***
		(34.153)	(14.574)
unemployment rate foreign			25.745**
			(10.080)
foreign tourism per capita			−18.115
			(18.031)
△refugee per capita			−85.159
			(103.060)
Constant	−14.347	−55.637	−209.880
	(171.050)	(367.630)	(216.540)
Observations	510	510	510
Log Likelihood	−1,037.883	−967.493	−953.669

CI(Max - Min): [3.492, 7.272]
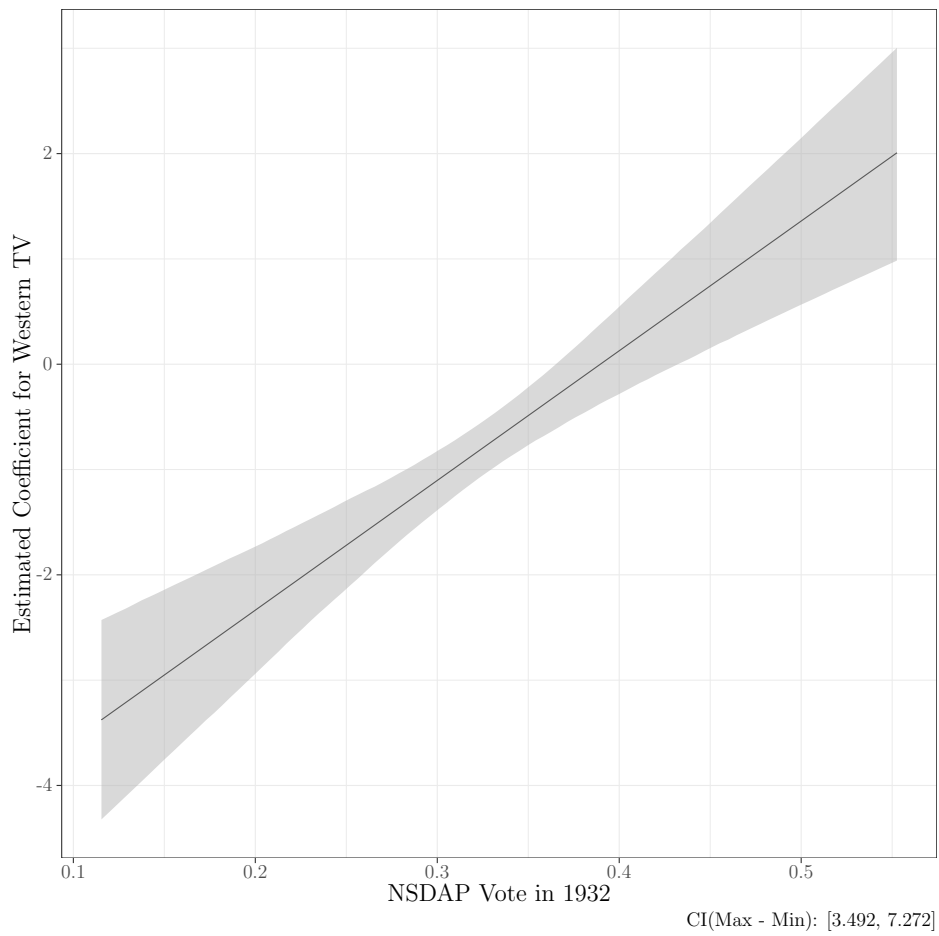
Figure 4: Effect of West TV on Hate crimes by NSDAP vote share

Marginal effects of Western TV on hate crimes against refugees depending on the vote share of the NSDAP in the 1932 election.

6 Appendix
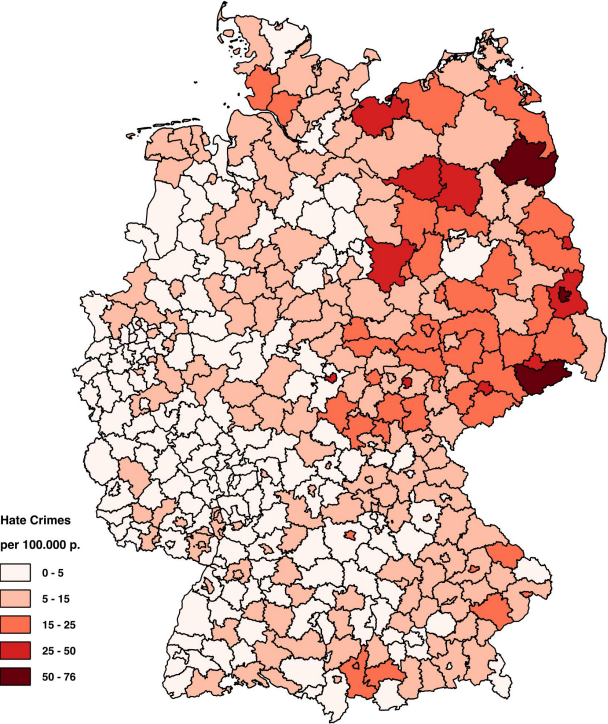
Figure A1: Hate Crimes per 100.000 inhabitants on District Level, Germany

Hate crimes against refugees per 100.000 inhabitants over the years October 2014 until 2017 for Germany. The data is aggregated on the county level.

Figure A2: Histogram of Hate Crimes

Aggregate of hate crimes against refugees over the years October 2014 until 2017 for the area of the former GDR. The data is aggregated on the municipality level. 510 observations.

Table A1: Correlation Matrix 1

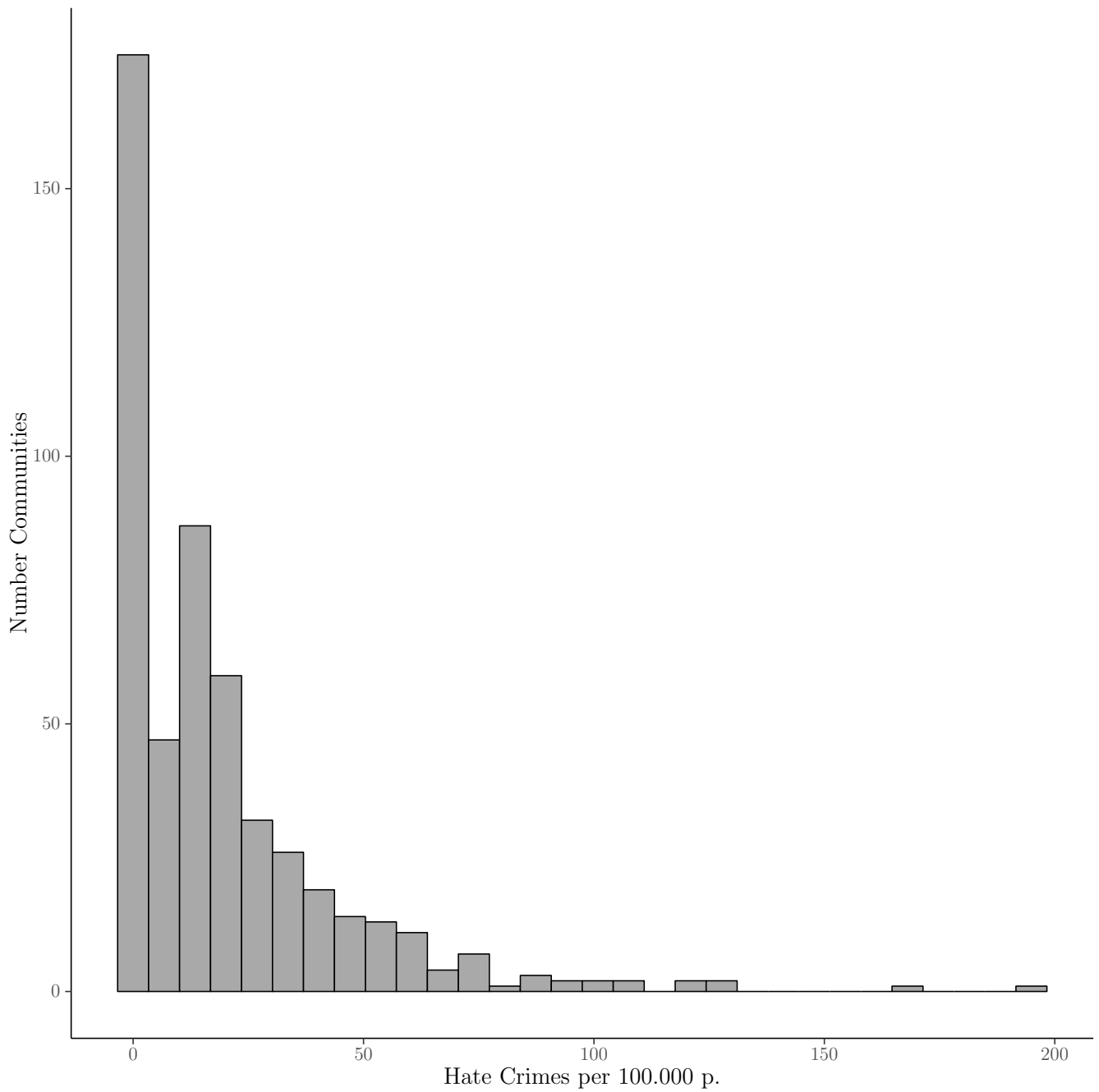|	Rate Hate Crimes	Western TV	population change	density	vote share NSDAP	protests 1989	alq	alq young	alq foreign
Rate Hate Crimes	1	-0.152	-0.205	0.050	0.009	0.038	0.334	0.292	0.220
Western TV	-0.152	1	0.096	-0.127	0.086	-0.002	-0.249	-0.168	-0.058
population change	-0.205	0.096	1	0.386	-0.348	-0.058	-0.518	-0.323	-0.304
density	0.050	-0.127	0.386	1	-0.330	0.422	-0.050	0.00003	0.033
vote share NSDAP	0.009	0.086	-0.348	-0.330	1	0.011	0.090	0.039	0.056
protests 1989	0.038	-0.002	-0.058	0.422	0.011	1	0.074	0.049	0.100
alq	0.334	-0.249	-0.518	-0.050	0.090	0.074	1	0.874	0.437
alq young	0.292	-0.168	-0.323	0.00003	0.039	0.049	0.874	1	0.358
alq foreign	0.220	-0.058	-0.304	0.033	0.056	0.100	0.437	0.358	1
share catholics	-0.063	-0.088	0.069	0.026	-0.212	0.009	-0.080	-0.101	-0.053
share protestants	-0.085	0.043	-0.060	-0.237	0.427	-0.069	-0.336	-0.407	-0.064
gdppc	0.005	0.066	0.042	0.219	-0.214	0.363	-0.079	-0.049	-0.082
share welfare recipients	-0.015	-0.208	-0.228	-0.175	0.137	0.065	0.338	0.308	0.069
foreign tourism pc	-0.052	-0.276	0.192	0.198	-0.151	0.152	-0.014	0.065	-0.088
△refugee per capita	0.041	0.090	-0.004	0.093	-0.055	0.322	0.116	0.158	0.040
crime pc	-0.001	-0.081	0.126	0.190	-0.265	0.381	0.217	0.256	0.039
share population <25	0.001	-0.037	0.417	0.387	-0.127	0.364	-0.127	0.001	-0.070
share drop outs	0.039	-0.124	0.155	-0.091	-0.092	-0.107	0.371	0.467	0.012

	share catholics	share protestants	gdppc	share welfare recipients	foreign tourism pc	△refugee per capita	crime pc	share population <25	share drop outs
Rate Hate Crimes	-0.063	-0.085	0.005	-0.015	-0.052	0.041	-0.001	0.001	0.039
Western TV	-0.088	0.043	0.066	-0.208	-0.276	0.090	-0.081	-0.037	-0.124
population change	0.069	-0.060	0.042	-0.228	0.192	-0.004	0.126	0.417	0.155
density	0.026	-0.237	0.219	-0.175	0.198	0.093	0.190	0.387	-0.091
vote share NSDAP	-0.212	0.427	-0.214	0.137	-0.151	-0.055	-0.265	-0.127	-0.092
protests 1989	0.009	-0.069	0.363	0.065	0.152	0.322	0.381	0.364	-0.107
alq	-0.080	-0.336	-0.079	0.338	-0.014	0.116	0.217	-0.127	0.371
alq young	-0.101	-0.407	-0.049	0.308	0.065	0.158	0.256	0.001	0.467
alq foreign	-0.053	-0.064	-0.082	0.069	-0.088	0.040	0.039	-0.070	0.012
share catholics	1	-0.092	-0.003	-0.011	-0.038	0.013	-0.095	0.161	-0.064
share protestants	-0.092	1	-0.139	-0.200	-0.194	-0.267	-0.466	-0.056	-0.372
gdppc	-0.003	-0.139	1	-0.056	0.341	0.239	0.367	0.213	0.013
share welfare recipients	-0.011	-0.200	-0.056	1	0.106	0.343	0.388	-0.001	0.502
foreign tourism pc	-0.038	-0.194	0.341	0.106	1	0.125	0.351	0.262	0.148
△refugee per capita	0.013	-0.267	0.239	0.343	0.125	1	0.498	0.069	0.300
crime pc	-0.095	-0.466	0.367	0.388	0.351	0.498	1	0.117	0.497
share population <25	0.161	-0.056	0.213	-0.001	0.262	0.069	0.117	1	0.053
share drop outs	-0.064	-0.372	0.013	0.502	0.148	0.300	0.497	0.053	1

Table A2: Cross-Section with kreis fixed

	Dependent variable:			
	(hatecases)			
	(1)	(2)	(3)	(4)
Western TV	−0.827***	−0.700***	−0.712***	−0.700***
	(0.219)	(0.226)	(0.224)	(0.224)
density	0.0003**	0.0002	0.0002	0.0001
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
share population <25		3.369*	2.843	3.234
		(1.721)	(1.840)	(1.998)
share catholics		−1.083	−1.146	−1.086
		(1.909)	(1.922)	(1.850)
share protestants		−0.584	−0.378	0.074
		(0.790)	(0.820)	(0.817)
share drop outs		−65.252	−223.173***	−226.528***
		(172.371)	(82.041)	(77.178)
log(gdppc)		4.870**	2.937	2.156
		(2.156)	(2.842)	(2.593)
crime per capita		−3.427	69.432*	58.256
		(36.783)	(36.507)	(35.486)
share welfare recipients		−103.138	295.917	381.010
		(221.735)	(258.298)	(233.981)
unemployment rate		11.315***	10.657***	10.737***
		(2.410)	(2.500)	(2.608)
unemployment rate young		−0.470	−0.857	−0.661
		(2.453)	(2.487)	(2.423)
population change		−1.186**	−1.124**	−1.424**
		(0.532)	(0.533)	(0.604)
share foreigner			3.670	4.877
			(6.444)	(6.451)
unemployment rate foreign			0.574	0.477
			(0.395)	(0.410)
foreign tourism per capita			−9.835***	−8.506**
			(3.755)	(3.721)
△refugee per capita			−220.429**	−201.242**
			(94.664)	(85.287)
vote share NSDAP				−2.110**
				(0.943)
protests 1989				0.006
				(0.007)
Constant	−8.162***	−56.324***	−40.017	−32.355
	(0.243)	(20.510)	(26.217)	(23.977)
Observations	510	510	510	510

Note: Standard errors are heteroskedasticity robust and clustered at municipality level. The unit of observation is the municipality. Significance at *p<0.1; **p<0.05; ***p<0.01