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IZA DP No. 15850

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ABSTRACT

Forced Migration and Social Cohesion: Evidence from the 2015/16 Mass Inflow in Germany*

A commonly expressed concern about immigration is that it undermines social cohesion in the receiving country. In this paper, we study the impact of a large and sudden inflow of asylum seekers on several indicators of social cohesion. In 2015/16, over one million asylum seekers from Syria, Afghanistan, and elsewhere arrived in Germany. Anecdotal evidence suggests that this inflow changed the public opinion on hosting asylum seekers, from being highly welcoming to fairly negative within a few months. Using individual- and county-level panel data, we test whether the evidence supports this apparent shift in attitudes. In a difference-in-differences design, we compare the attitudes of individuals in areas with large vs. small local inflows before and after the inflow. In individual survey data, we find mixed evidence of an impact on social cohesion. In a representative sample, we find no evidence that the inflow undermined social cohesion, except for a negative effect on donations to charity. In areas with high vote shares for the populist party AfD, we find that the inflow led to greater anti-immigrant sentiment and a greater concern about crime. We also show that areas with larger increases in the number of asylum seekers experienced a significant increase in anti-immigrant violence, which lasted for about two years before returning to its pre-inflow level. This effect was larger in areas with higher unemployment and greater support for AfD.

JEL Classification: J15, J61

Keywords: forced migration, social attitudes, anti-immigrant violence

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1 Introduction

Recent events have once more triggered large flows of forced migrants worldwide. More than five million people fled from Ukraine within a few months in 2022, and the worsening humanitarian situation in Afghanistan led around one million people to leave the country between August and December 2021.[1] While destination countries recognize the legal and moral obligation of hosting refugees, the challenges of integrating large numbers of migrants remain politically divisive. A common concern is that increased diversity fractures communities and undermines the social fabric of the host country. As ethnic diversity increases, the argument goes, competition between social groups grows (Scheepers et al., 2002, Van der Meer and Tolsma, 2014) and individuals' commitment to and participation in society diminishes — a phenomenon that has been termed *hunkering down* (Putnam, 2007).

In this paper, we investigate whether hosting asylum seekers affects social cohesion in a major receiving country. We study the case of Germany, which welcomed over one million asylum seekers from Syria, Afghanistan, and the Western Balkans in 2015/16. This inflow doubled the population of persons seeking protection in Germany, from around one to two million. Although the inflow initially received broad support from the German population, attitudes towards asylum seekers in parts of society drastically changed after a series of events on New Year's Eve 2015/16. The most salient incident occurred in Cologne, where around 600 women were sexually assaulted, with some of the perpetrators being recently arrived asylum seekers. This event, along with the growing general discontent about the country's immigration policy is often seen as an accelerator for the growth of the far-right movement in Germany (Gedmin, 2019).

The rapid change in public opinion makes Germany a particularly interesting case to study. Based on individual- and county-level panel data, we test whether the observed change in public opinion is accompanied by deeper changes to the social fabric. We use data from the SOEP — a large-scale panel survey — as well as county-level data on incidents of anti-immigrant violence from the Amadeu Antonio Foundation. We measure social cohesion along several dimensions, namely generalized trust, perceived fairness, attitudes toward foreigners, and anti-immigrant violence. The panel data allow us to track individuals' attitudes over time, and compare *changes* in attitudes between people residing in counties with high vs. low inflows in a difference-in-difference setting. This addresses many potential concerns about endogeneity, for example, that people who are more welcoming to foreigners are more likely to live in areas that also attract many foreigners. We combine these data with county-level data on the increase in the number of persons seeking protection between 2014 and 2016 from the German Central Register of Foreigners. We also consider an alternative dataset on the official number of asylum seekers assigned to each county compiled from administrative sources by Gehrsitz and Ungerer (2022).

The paper has two central findings. First, in individual-level survey data, we find mixed evidence of an effect of the inflow on indicators of social cohesion. In a sample that is representative of the full population, we find no effect on people's views about society — trust, perceived fairness, and perceived helpfulness of other people — and neither on their concerns about crime or anti-immigrant

[1] Sources: UNHCR Operational Data Portal; Accessed on May 10, 2022. IOM DTM Afghanistan: Emergency Event Tracking.

sentiment. The only significant effect we find is on donations. An increase in the local number of asylum seekers reduces the likelihood that a person donates to a charity within a given year by about 4% of the mean. These results mask some interesting heterogeneity. In areas with above-median employment rates, the inflow had a small positive effect on trust and perceived fairness, whereas all effects are small and statistically insignificant in areas with low employment rates. In areas with high vote shares for the AfD — at that time a populist party — the inflow led to stronger anti-immigrant sentiment, a greater concern about crime, and a lower likelihood of donations to charity. These results suggest that the inflow had negative effects on social cohesion in areas where people are generally more concerned about immigration. However, the results for the full sample do not confirm the anecdotal evidence that attitudes towards immigrants and trust in government considerably worsened in 2015/16, or that the inflow caused dramatic changes in people's general social attitudes.

A second finding is that the local presence of asylum seekers increased the incidence of anti-immigrant violence. While the incidence evolved similarly in high and low-inflow counties before the inflow, it increased disproportionately in high-inflow counties after 2015. A doubling of the local asylum seeker population increases the incidence of anti-immigrant violence by 0.05 incidents per 100,000 inhabitants per month, which is a 166% increase relative to the pre-2015 average. This increase was mainly driven by attacks on asylum accommodation and is concentrated among the top 10% of municipalities with the largest inflows of asylum seekers. Moreover, the effect is stronger in areas with high unemployment as well as a higher share of AfD voters.

The contribution of this paper is that we use a combination of datasets and document the impact of asylum seeker inflows on attitudes as well as actions. The existing literature — further discussed in Section 2 — has mainly produced separate studies on attitudes or anti-immigrant violence, but what is lacking is a study that provides a comprehensive evaluation doing both. Moreover, we can use panel data on anti-immigrant violence to study the dynamic effects of the inflow. Our results suggest that general attitudes are hardly affected by a large-scale inflow of asylum seekers, although there is an impact on anti-immigrant violence, which is an extreme form of anti-immigrant sentiment and a reflection of a decline in social cohesion. The dynamic analysis shows that the effect on violence was temporary; the local levels of violence returned to their pre-inflow levels after about two years.

These results hold two important lessons for integration policy. The German case highlights the challenges that come with integrating large numbers of migrants, namely an increase in anti-immigrant sentiment and even increased anti-immigrant violence. On a more positive note, though, the often-expressed fear that sudden migration flows undermine the foundations of society appears excessive. A second lesson is that the impact on anti-immigrant sentiment and violence is heterogeneous across areas. The effect is concentrated in areas with very large inflows as well as areas with high unemployment and high vote shares for far-right parties. In most areas, however, the effect is close to zero. When assigning asylum seekers to local areas, policymakers could take these responses into account, thereby minimizing the negative effect of asylum-seeker inflows on anti-immigrant sentiment.

The remainder of the paper is structured as follows. Section 2 reviews the literature on diversity and social cohesion as well as the literature on forced migration. Section 3 provides the historical background of forced migration flows to Germany. Section 4 describes the data sources — the SOEP and the data on anti-immigrant violence. Section 5 lays out the identification strategy. Section 6 presents the results, which are further discussed in the conclusion in Section 7.

2 Related Literature

This paper contributes to two strands of literature, namely the literature on the effect of immigration and diversity on social cohesion as well as the literature on the economic and social impact of large flows of forced migrants. In the following, we briefly summarize each strand of literature and discuss the contribution of our paper.

2.1 Immigration, Diversity and Social Cohesion

A vast literature in the social sciences focuses on the effect of ethnic diversity on social cohesion. Ethnic diversity describes the ethnic composition of a population within a geographic boundary. It is a broader concept than immigration, although both are inextricably linked. A society composed of one ethnic group is considered homogeneous, whereas a society composed of many ethnic groups is considered ethnically diverse. Immigration is often at the root of ethnic diversity because ethnic diversity today is the result of past immigrant inflows. By the same token, immigration today may increase ethnic diversity in the future.

The literature on diversity and social cohesion is based on two dominant theories — *Conflict Theory* (Putnam, 2007) and the *Contact Hypothesis* (Allport, 1954, Pettigrew and Tropp, 2006). Both theories rely on the idea that individuals identify with members of their ethnic or social group — the *in-group* — more than with members of other groups — the *out-group*. Conflict theory predicts that the presence of diverse ethnic groups undermines social cohesion, both through increased intergroup competition over scarce resources or *Ethnic Competition Theory* (Scheepers et al., 2002) and increased anxiety within the in-group over shared social norms (Van der Meer and Tolsma, 2014).[2] The consequence is decreasing generalized trust and commitment to society — a phenomenon which has been termed *Hunkering Down* (Putnam, 2007). In sharp contrast with these conclusions, the Contact Hypothesis holds that — in presence of the appropriate conditions — a more diverse society intensifies the contact between members of different groups, thereby increasing trust and social cohesion (Allport, 1954).

Ethnic diversity and social cohesion are among the most frequently studied relationships in the social sciences. The literature has produced a wealth of findings based on a varying geographic focus and different measurements of social cohesion. Most studies find mixed results. Some cross-country studies have found a negative relationship between ethnic diversity and trust (Delhey and Newton, 2005), while others highlighted positive effects on some dimensions of social cohesion (Anderson and Paskeviciute, 2006). Moreover, cross-country studies tend to find that greater ethnic diversity predicts — and in some cases even causes — civil conflict and reduced redistribution (e.g. Montalvo and Reynal-Querol, 2005b,a, Desmet et al., 2009, 2012, Esteban et al., 2012). The findings from within-country studies are mixed as well (e.g. Putnam, 2007, Gijsberts et al., 2012, Abascal and Baldassarri,

[2]This theory is also known as *Group Threat Theory* (Blumer, 1958, Bobo and Hutchings, 1996).

2015, Hickman and Mai, 2015, Dinesen and Sønderskov, 2015, Laurence and Bentley, 2016, Gereke et al., 2018). A major reason for the inconsistent results is the presence of omitted variables that affect diversity and attitudes at the same time. Moreover, how to measure ethnic diversity is a critical issue. It is far from clear what dimension of ethnic diversity affects people, what the relevant geographic unit for measuring diversity is, and through what mechanisms the effect of diversity unfolds. The empirical evidence offers some answers to these questions, especially regarding geography. The more localized the measure of ethnic diversity is, the stronger its relationship with social cohesion. For example, most studies find a negative link between ethnic diversity and trust when ethnic diversity is measured at the neighborhood level. This link appears to be much stronger in the U.S. than in Europe, Australia, New Zealand, or Canada (Van der Meer and Tolsma, 2014).[3]

We make three contributions to the literature on diversity and social cohesion. First, we document the effect of a large and sudden inflow of asylum seekers on social cohesion. Although the links between social cohesion and diversity have been explored extensively, evidence of the effect of forced migration is limited. Providing such evidence is important because asylum seekers are a major immigrant group whose motivations, characteristics, and needs differ greatly from those of other migrants. Their effect on a host country, therefore, is likely different from the effect of economic migrants (Becker and Ferrara, 2019).

Second, the sudden and unexpected inflow of over a million people allows us to quantify the *causal* effect of the inflow of forced migrants on social cohesion. In many studies, it is difficult to separate correlation from causation because diversity and social cohesion may be determined by the same social processes. In our case, the inflow occurred within a few months and led to an unprecedented increase in the local number of asylum seekers. Assignment rules at the state and county levels mean that the inflow was greater in some counties than in others. This setting allows us to estimate the causal effect of the local presence of asylum seekers on several dimensions of social cohesion.

Finally, we combine survey-based indicators of social cohesion with data on physical and political violence against out-group members. Most studies in this literature consider social attitudes measured in surveys to determine whether diversity affects social cohesion, as we also do in this paper. However, we complement information on individual attitudes with information on the prevalence of violence against asylum seekers, which provides a direct measure of social conflict. Violence against out-group members arguably represents a more immediate threat to social cohesion than changes in social attitudes, whose consequences might take longer to materialize. Therefore, group violence might warrant a swifter and more timely response from policymakers.

2.2 Consequences of Large Forced Migration Flows for Host Societies

Our paper also contributes to the growing literature on the impact of forced migration. The term *forced migration* is defined as the migratory movement of individuals whose drivers involve force, compulsion, or coercion — including movements of refugees and persons displaced by disasters.[4] As such, forced migration flows can have impacts on host societies that are fundamentally different

[3] Additional reviews of the literature on diversity and trust are provided by Schaeffer (2014) and Dinesen and Sønderskov (2018).

[4] IOM. *Glossary on Migration*. 2019.

from those caused by other types of migration (Becker and Ferrara, 2019). Moreover, the last years have witnessed several *mass* forced migration movements, such as the emigration waves from Syria, Myanmar, and more recently from Ukraine. The sheer size of such migration flows suggests that these movements have specific consequences not seen in other contexts.

General literature on the impact of forced migration Becker and Ferrara (2019) review and summarize the findings of existing studies on forced migration movements. The conclusion that emerges is that forced migration is a life-changing experience that has consequences different from and going beyond those of voluntary migration in terms of integration dynamics. For instance, Cortes (2004) shows that the earnings of refugees in the US were lower than those of voluntary migrants upon arrival, but grew faster in subsequent years. Moreover, the study highlights that human capital investments were higher among refugees than economic migrants. This finding is consistent with historical evidence provided by Becker et al. (2020), showing that forced migrants in post-war Poland invested more in human capital after their expulsion compared to non-migrants.

The legal situation of forced migrants in host countries also plays an important role. For instance, laws restricting refugees and asylum seekers from accessing employment entail that competition with natives is less evident in the formal sector (Gehrsitz and Ungerer, 2022) but also that natives might be displaced from informal employment (Del Carpio and Wagner, 2015, Tumen, 2016). Clemens et al. (2018) argues that lifting such restrictions would benefit both refugees and hosts through reduced vulnerability among migrants and higher revenues for local governments. Higher participation of refugees in the informal sector has further consequences for price dynamics. Tumen (2016) and Balkan and Tumen (2016) find that the inflow of Syrian refugees in Turkey reduced the prices of goods produced mainly by the informal economy. Conversely, Alix-Garcia et al. (2018) find that the inflow of refugees in Kenya increased demand for agricultural and livestock products produced by natives, as refugees were not allowed to work.

A further strand of literature studies the role of meeting opportunities for natives and immigrants in fostering social cohesion. In this regard, workplaces have great potential, although, as shown by Gowricharn (2002) in the Netherlands, migrants often cluster in low-paid jobs where fruitful interactions with natives are rare. Zihnioglu and Dalkıran (2022) show for Turkey that the effort of NGOs to create meeting spaces for Syrian refugees and the local population did not increase social cohesion in either group. More promising are initiatives that bring refugees together with people or institutions of authority, which helped with the social integration of Syrian refugees. This evidence is consistent with experimental results by Valli et al. (2019), which show that providing more generous social transfers to Colombian refugees and poor Ecuadorians in Ecuador increased the social cohesion among refugees but not Ecuadorians.

Consequences of the 2015/16 asylum seeker inflow: empirical evidence The impact of the mass asylum seeker inflow in Germany in 2015/16 has been documented in a growing literature. Although labor market effects seem to have been limited in the short term (Gehrsitz and Ungerer, 2022), some positive effects were observed in areas that received migrants from the same countries of origin as in the past (Deole et al., 2020). Stips and Kis-Katos (2020) highlight the positive role played by co-ethnic networks in fostering labor market integration.[5] Studies on the German housing market suggest that the presence of asylum seekers represents a negative amenity. Specifically, rental prices in high-inflow areas or the vicinity of asylum shelters decreased disproportionately after the inflow (Kurschner Rauck and Kvasnicka, 2018, Kurschner Rauck, 2020, Hennig, 2021). These findings are consistent with results from a choice experiment by Liebe et al. (2018), who show that large parts of the sample oppose a reception center in their vicinity. The evidence does not suggest that the inflow of asylum seekers affected violent crimes in general (Huang and Kvasnicka, 2019). However, non-violent property crimes, petty crimes, and drug offenses did exhibit an increase (Gehrsitz and Ungerer, 2022, Dehos, 2021).

Several studies focus on changes in how the asylum seeker inflow shaped natives' political preferences and perceptions toward foreigners. Mader and Schoen (2019) document that the support for the conservative party CDU decreased after the CDU-led government decided to admit a large number of asylum seekers. The evidence on voting outcomes is mixed: Schaub et al. (2021) find no effect of the local presence of asylum seekers on voting outcomes in the federal elections, while Bredtmann (2022) reports small effects on right-wing voting in the state election in Rhineland-Palatinate. In contrast, Steinmayr (2020) finds that a stronger presence of asylum seekers reduced voting for right-wing parties in Upper Austria. Concurrent with the shift in political preferences was a shift in natives' perceptions of — and behavior towards — immigrants. Bansak et al. (2016) conduct a conjoint experiment in several European countries and find that people prefer admitting asylum seekers who come for humanitarian reasons as well as those who worked in a high-status occupation before migrating. Moreover, people are less willing to admit Muslims, migrants who come for economic reasons, and those with poor language skills. Except for anti-muslim bias and the reluctance to accept economic migrants, perceptions about migrants do not differ significantly between people of different socio-economic status or political preferences. The literature highlights that perceptions about migrants changed substantially after the assaults on New Year's Eve in Cologne 2015/16. Following these events, natives' acceptance of migrants from Arab and African countries dropped significantly — although acceptance of asylum seekers or Muslims, in general, remained unaffected. The assaults on New Year's Eve 2015/16 also strongly increased extreme manifestations of negative attitudes against immigrants, namely anti-immigrant violence (Jäckle and König, 2018, Frey, 2020). The largest increases in anti-immigrant violence occurred in places that previously had low numbers of immigrants but experienced a rapid increase in immigrant numbers after 2014 (Jäckle and König, 2018).

The most closely related studies to ours are Entorf and Lange (2019), who study the determinants of anti-immigrant violence in Germany, and Schaub et al. (2021), who study the impact of the asylum seeker inflow on attitudes in rural East Germany. Entorf and Lange (2019) use data on attacks against asylum seekers between 2013 and 2015, which were compiled from police records following parliamentary inquiries from a political party. They find a small overall effect of the inflow of asylum seekers on hate crimes, although the effect masks considerable heterogeneity. The effects are larger in East Germany and in areas that traditionally had high shares of right-wing votes. Schaub et al.

[5] A related literature studies the effect of local conditions on the integration of asylum seekers in Germany, for example, Marbach et al. (2018), Aksoy et al. (2020) or Fasani et al. (2021). For a review, see Brell et al. (2020).

(2021) focus on rural areas in East Germany that had not received many asylum seekers before 2014. They conducted a survey, eliciting people's political and social attitudes through survey questions and behavioral games. Overall, they find no significant impact of the inflow on political and social attitudes. This null result appears to stem from the fact that left-leaning people become less while right-leaning people become more amenable to having asylum seekers nearby. Another relevant study is by Tassi (2022) who uses the SOEP to show that the inflow leads to more volunteering among the German population. Our paper is related to those papers but adds several important insights. First, we use individual-level panel data on attitudes, allowing us to use a difference-in-difference analysis and compare differences in attitudes before and after the inflow. Second, we use panel data on anti-immigrant violence to study the dynamic effects of the inflow. Our results show that understanding the dynamics is important. The immediate effect was fairly large but subsided after less than two years. Finally, by combining insights from survey and regional data, we provide a more comprehensive picture of the impact of the inflow on social cohesion compared to studies relying on one data source.

A country that received a considerably higher number of Syrian asylum seekers than Germany is Turkey. Many studies have analyzed the economic effects of this mass inflow, which led close to four million asylum seekers into the country. Besides the aforementioned effects on the informal economy, Altındağ et al. (2020) show that the inflow led to an increase in the number of firms. Most of the newly established firms were small and operated in the hospitality and construction sectors. Several studies also document effects on education: the inflow of asylum seekers increased the likelihood that natives send their children to private school, increased high school enrolment rates among native children, and led to an improvement in their PISA test scores (Tumen, 2018, 2019, 2021). A study by Altındağ and Kaushal (2021) analyzes the effect of the asylum seeker inflow on voting but finds no significant effects. Over the same period, many Greek islands received substantial inflows of asylum seekers — especially when considering their small population. Hangartner et al. (2019) find that anti-immigrant attitudes and activism increased and that these effects persist over time.

Our analysis expands the existing literature in two ways. First, we document how the local assignment of asylum seekers during the 2015-16 inflow changed social attitudes and anti-immigrant violence in Germany, as well as the natives' perception of migrants. In particular, we show that the observed effects of the migration flow are tightly linked to the assaults that occurred on New Year's Eve 2015-16, which exacerbated negative responses to the arrival of migrants. Second, we explore the heterogeneous effects of the migration flow by focusing on counties that exhibited lower employment levels and higher support for far-right parties before 2015.

3 The 2015/16 Asylum Seeker Inflow in Germany

3.1 Definition: Asylum Seekers vs. Refugees

In the literature, the terms *asylum seekers* and *refugees* are often used interchangeably to describe migrants who flee from wars, conflicts, or other types of hardship. However, both terms do not refer to the same group of migrants. The term *asylum seeker* covers a much broader group of migrants, namely individuals who are seeking international protection. Not all asylum seekers eventually get recognized as refugees. Consequently, not every asylum seeker is a refugee but every refugee was initially an asylum seeker (UNHCR, 2005). This distinction was often absent in the German public debate, which mainly talked about refugees (*Flüchtlinge*) even though what was typically meant was asylum seekers or, more broadly, anyone who came to Germany to seek protection. In our analysis, we consider all asylum seekers regardless of their eventual recognition as refugees or their status as persons under subsidiary protection and refer to them as *asylum seekers*.

3.2 The 2015/16 Inflow

In 2015/16, over one million asylum seekers from countries such as Syria, Afghanistan, Iraq, and several countries in the West Balkans arrived in Germany. Such figures dwarf the waves of asylum seekers to Germany since 1950.[6] As shown in Figure 1(a), the number of asylum seekers peaked in 2015 with over 700,000 arrivals. In total, over one million asylum seekers came to Germany between 2014 and 2016, leading to a doubling of the number of asylum seekers in the country. The majority of these migrants fled from conflicts in Syria, Afghanistan, and Iraq, although significant numbers also moved from Kosovo and Albania.[7]

Immigration to Germany accelerated in mid-2015 when the German government decided to stop applying the Dublin Regulation for Syrians. Up to that moment, asylum seekers were legally obliged to apply for asylum in the country in which they entered the zone covered by the Dublin Regulation — which, at that time, were mostly Greece and Hungary. As more and more migrants gathered in refugee camps along the *Balkan Route* between Turkey and Central Europe — often in dramatic conditions — countries along the external borders of the European Union imposed border closures and adopted policies to prevent migrants from entering their territory. In this context, the German government decided in August 2015 to allow Syrians to seek asylum in Germany without applying the Dublin Regulation (Deutsche Welle, 2017). What followed was the large migration wave that is displayed by the shaded area in Figure 1(a). Following the migration wave, in 2016 Germany became the country hosting the largest number of asylum seekers in Europe. Within Europe, Germany hosted the majority of Syrians (in 2020 around 59%), followed by Sweden (11%).[8] The large number of Syrians going to Germany was mainly a result of the country's open-door policy vis-a-vis Syrians (UNHCR, 2021).

As shown in Figure 1(b), in late 2016, the number of arriving asylum seekers dropped to its pre-2014 levels. The reasons for this drop were the closing of several borders along the Balkan Route and, most importantly, an agreement between the EU and Turkey in March 2016, in which Turkey agreed to prevent migrants from moving to the EU in exchange for a payment of six billion Euro and an agreement that the EU would resettle one Syrian asylum seeker from Turkey in exchange for every

[6] A substantially larger forced migration wave occurred between 1944 and 1950 when around 12 million Germans were expelled from Central and Eastern Europe and moved to Germany within its current boundaries (e.g. Chevalier et al., 2018).

[7] According to BAMF, the number of asylum seekers was 173,072 in 2014, 441,899 in 2015, and 722,370 in 2016. It should be noted, however, that many of the persons who were registered as asylum seekers in 2016 arrived in 2015 but their registration got delayed due to a backlog in the application system.

[8] Relative to the population size, Germany took in fewer Syrians than other countries. According to the UNHCR, the absolute number of Syrian asylum seekers and refugees in 2017 was 466,000, which was around 0.6% of the population. In Austria, the share was comparable (0.54%), whereas in Sweden the share was around 1.1%.

non-Syrian migrant who is turned away by the EU (Kirişci, 2021). The actual number of asylum seekers coming to Germany dropped almost immediately after the EU-Turkey deal. One reason why the number of asylum applications increased until early 2017 was the time lag in processing asylum applications by the BAMF (BAMF, 2019a, p. 15).

3.3 Perception of Immigrants in the German Public

Unsurprisingly, the asylum seeker inflow of 2015 was a much-debated and controversial issue. The country's decision to welcome asylum seekers was initially met with broad public support among the German public, perhaps best summarized by German Chancellor Angela Merkel's pledge from August 2015, "*Wir schaffen das!*" (*We can do it!*). Nonetheless, the economic and social integration of asylum seekers posed a significant challenge for the country. From a practical perspective, it was challenging to host over one million people who arrived in 2015 and 2016 and gradually integrate them into the labor market. Data show that the asylum seekers were considerably less qualified than most Germans and initially lacked the necessary language skills to gain easy access to the labor market or the education system (Brücker et al., 2016).

A second challenge was both political and cultural. Concerns about the challenges of integrating over one million people — often from different cultural backgrounds and little knowledge about German society — were quickly growing. Political opposition to the government's policy soared after a series of assaults against women on New Year's Eve 2015/16. Many of the perpetrators were immigrants, among them recently arrived asylum seekers. The most severe incident occurred in Cologne, where over 600 women were reportedly sexually assaulted. These events fundamentally changed the public's perception of asylum seekers. It sparked anti-immigrant violence (Frey, 2020), fuelled right-wing movements like *Pegida*, and contributed to the rise of the AfD, a right-wing party that first entered the German parliament in 2017 (Gedmin, 2019, Deutsche Welle, 2020).

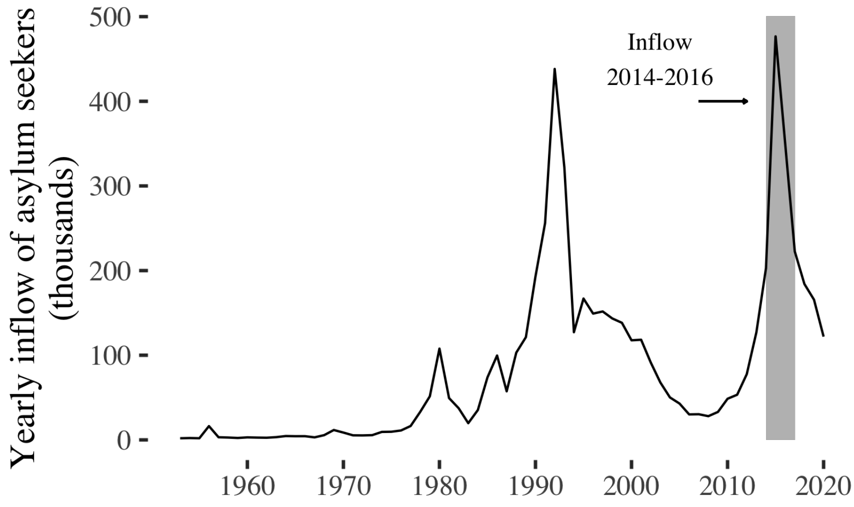
3.4 Assignment of Asylum Seekers

The assignment of asylum seekers to local areas is organized through a centralized system, although certain responsibilities are delegated to states, counties, and municipalities. Asylum seekers who arrive in Germany have to report to the border authorities, the police, or a regional office of the Federal Office for Migration and Refugees and apply for asylum. Upon doing so, they are registered in an asylum seeker database called EASY and received a certificate (*Büma*) that confirms their status as an asylum seeker and entitles them to social benefits (BAMF, 2019b).

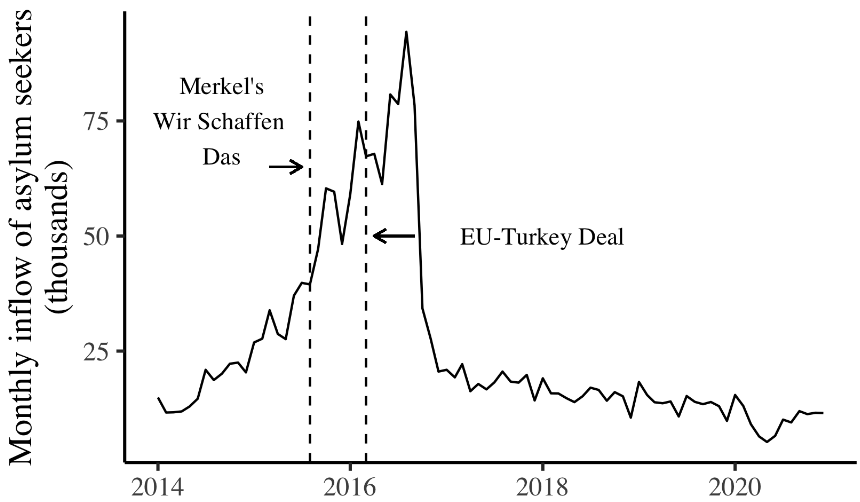
The assignment of asylum seekers is carried out in multiple steps. In the first step, they are assigned to reception centers that are run by the 16 federal states. The assignment of asylum seekers across states is governed by a quota system called *Königsteiner Schlüssel*, whereby quotas are set annually based on states' tax revenues (weight 2/3) and population (weight 1/3) two years prior. Federal law requires asylum seekers to stay in the initial reception centers for up to six months, after which they are assigned onward by the state administration to local accommodation centers run by counties or municipalities. Asylum seekers have little to no influence over their assignment procedure; the assignment is done by the state administration according to the law but also takes into account the availability of suitable accommodation. Asylum seekers have to stay in these centers until a decision on their refugee status is reached (AIDA, 2015). The assignment procedure from the state to the local level as well as the requirement to stay in a given accommodation differ between states. In most states, the assignment of asylum seekers to municipalities is proportional to the population. After a person has been recognized as a refugee, they have to stay for another three years in the state to which they were initially assigned. Several states apply stricter residence rules, requiring asylum seekers to stay in the local area (county or municipality) to which they have been initially assigned (BBSR, 2017).[9]

The German asylum system was largely unprepared for and overwhelmed by the mass inflow of asylum seekers in 2015/16. In terms of available spaces in reception centers, staffing, and IT systems, the system was set up for an annual inflow of 50,000 asylum seekers. The sudden arrival of over one million asylum seekers forced the Federal Office and the state administrations to apply the rules more flexibly. In particular, this concerned the assignment of asylum seekers to reception centers and onwards to accommodation in the municipalities. The states had to build temporary welcome centers or repurpose buildings suitable for accommodating asylum seekers. Within municipalities, asylum seekers were often housed in gymnasiums, army barracks, hotels, or other large buildings that were owned or rented by local councils. The availability of suitable accommodation also influenced the local assignment of asylum seekers. More asylum seekers were assigned to municipalities with available accommodation (AIDA, 2015).

[9] BBSR (2017, p.14) provides a table with the assignment mechanisms within each state.



(a) Annual Inflows of Asylum Seekers, 1953-2020



(b) Monthly Number of Asylum Applications, 2014-2020

Figure 1: Asylum Seeker Inflows in Germany

Notes: This figure shows the number of asylum applications in West Germany (until 1990) and reunified Germany (from 1990). In Figure (a), the period of the mass inflow in 2015/16 is shown shaded in gray. Figure (b) reports the monthly number of asylum applications between 2014 and 2020.
Source: Das Bundesamt in Zahlen 2016, BAMF, and Federal Statistical Office of Germany.

4 Data Sources and Descriptive Statistics

To study the impact of the asylum-seeker inflow on social cohesion, we combine county-level data on asylum-seeker inflows with individual-level panel data as well as county-level data on anti-immigrant violence.

4.1 Asylum Seeker Inflows

The goal of our analysis is to estimate the impact of the large and sudden inflow of asylum seekers in 2015/16 on social attitudes and anti-immigrant violence. For this purpose, we require a measure of the local inflows of asylum seekers around this period. Importantly, we want to measure the local inflow of all types of asylum seekers regardless of their eventual protection status — that is, regardless of whether people who arrived in Germany to seek protection are eventually recognized as refugees, were granted subsidiary protection status (but not recognized as refugees) or waiting for their asylum decision. To study long-term outcomes, a distinction between protection statuses may be important. However, for evaluating a short- to medium-run effect on natives' social attitudes, we believe that this distinction is less relevant. If anything, natives could notice an overall increase in the number of foreigners in their vicinity. However, it appears implausible that natives could see whether a recently arrived immigrant living in their vicinity was an asylum seeker waiting for a decision or a recognized refugee. Therefore, our measure of local inflows should ideally capture the county-level increase in the total number of persons seeking protection who came in 2015/16 to a given county in Germany.

Our main data source is the Central Register of Foreigners (*Ausländerzentralregister*), which provides data on the stocks of persons seeking protection — including asylum seekers, refugees, and persons who were granted subsidiary protection — who reside in a given county at the end of a given year. Asylum seekers are only counted in this data once they have officially filed an asylum application. Because of a backlog in the system in 2015, this means that many asylum seekers who arrived in a county in 2015 only appear in the statistics for 2016. We consider as a local inflow the difference in the number of persons seeking protection between the end of 2014 and the end of 2016. This measure captures the inflow of people during the mass inflow in 2015/16. In this period, we have information on the number of persons seeking protection for 393 out of 401 counties.

In the analysis, we use as the regressor of interest is the increase in the number of asylum seekers in a county relative to the stock of asylum seekers in 2014,

$$\text{asylum inflow}_c^{14-16} = \frac{\text{asylum seekers}_c^{16} - \text{asylum seekers}_c^{14}}{\text{asylum seekers}_c^{14}}. \tag{1}$$

The numerator is the difference in the number of people who arrived as asylum seekers and reside in a county at the end of 2014 and the end of 2016. We relate this increase to the number of asylum seekers at the end of 2014, such that the variable gives us a percentage increase in the number of asylum seekers. A value of one means that in a given county the number of asylum seekers doubled between 2014 and 2016. Figure 2b shows that the size of the increase in the number of asylum seekers varied considerably across counties. Whereas the majority of counties lie in a range between 20%

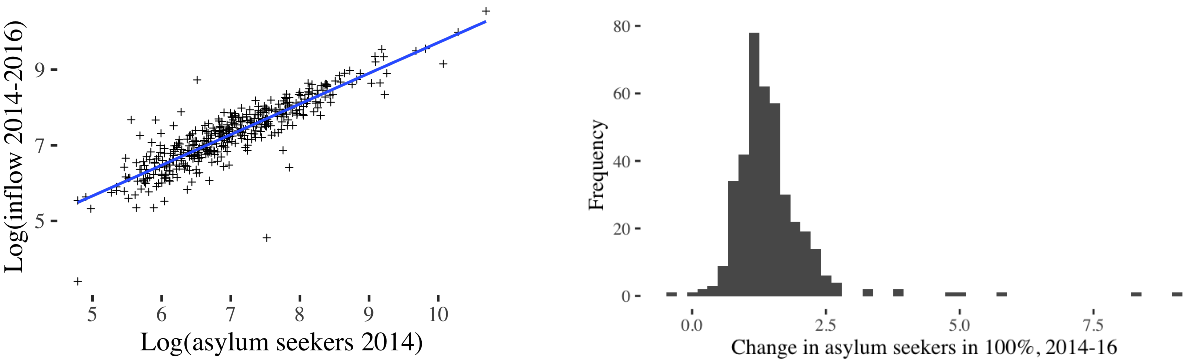
and 250%, there were virtually no counties with an increase of zero and few counties with increases larger than 250%.

The reasoning behind defining the regressor as a percentage change is the following. The number of asylum seekers in 2014 in the denominator approximates the number of asylum seekers natives are used to. The numerator represents the increase in the number of asylum seekers relative to this benchmark. Our choice of regressor has been motivated by recent evidence from the Brexit referendum, which shows that natives tend to respond more strongly to increases in the absolute number of foreigners rather than the per-capita number (Economist, 2017, Goodwin and Milazzo, 2017). Moreover, in our regressions, we include individual or county fixed effects, which implicitly control for the population size of a county before the inflow. Conditional on fixed effects, the variable in Equation (1) measures the percentage increase in the number of asylum seekers for a given initial population size.

In robustness checks, we will address two challenges regarding our measure of the local inflow. First, the difference in the numbers of asylum seekers between the end of 2014 and the end of 2016 may not accurately represent the size of the inflow if some asylum seekers moved within this period. Although the mobility of asylum seekers was initially restricted, they could move freely within states once they were recognized as refugees. Therefore, if refugees left a county before the end of 2016, they would not be counted in this statistic. A second challenge is that our measure does not directly include the population size of a county. To address both challenges, we use data on the initial assignment of asylum seekers per 100,000 inhabitants that were compiled by Gehrsitz and Ungerer (2022) from administrative records of state-level ministries. These data measure the cumulative number of asylum seekers that were assigned by the state authorities to a county between January 2014 and December 2015. For an easier interpretation of our estimates, we re-scale this variable to reflect the number of assigned asylum seekers per 1,000 inhabitants.

Between 2014 and 2016, the number of asylum seekers in Germany approximately doubled from one to two million. Figure 2a relates the county-level change in the number of asylum seekers between 2014 and 2016 to the stock of asylum seekers in January 2014, before the inflow. The largest inflows are observed in counties that already hosted the largest number of asylum seekers before 2014. The slope of the regression line is 0.8, which means that a 1% higher number of asylum seekers in 2014 is associated with a 0.8% higher inflow between 2014 and 2016. The stock of asylum seekers in 2014 explains more than 90% of the variation in asylum seeker inflows by county. This relation suggests that the assignment of asylum seekers to counties approximately follows the assignment rules, and the assignment is stable over time. Moreover, the fact that current and past asylum seekers reside in the same counties suggests that there was little internal migration of asylum seekers after their initial assignment.

Figure 3 displays the geographic distribution of the increase in the number of asylum seekers relative to 2014 across Germany. There is no clear geographic pattern in the size of the inflow. The increase was lower in the Western states of Rhineland-Palatinate and North Rhine-Westphalia, but otherwise, the size of the inflow varies considerably across counties. In Figure A.1 in Appendix A.3, we also show that the relative size of the inflow was uncorrelated with the prior unemployment rate, and had a weak positive correlation with the prior GDP.



(a) Asylum seeker inflows 2014-16 vs initial numbers of asylum seekers in 2014

(b) Increase in the number of asylum seekers 2014-2016, relative to 2014.

Figure 2: Assignment of Asylum Seekers across Counties

Notes: (a) This scatter plot relates the size of the inflow of asylum seekers between 2014 and 2016 to the number of asylum seekers in the same county in January 2014. The slope of the regression line is 0.8. (b) This graph shows the distribution of the increase in the number of asylum seekers in a county between 2014 and 2016 relative to 2014. A value of one means that the number of asylum seekers doubled. A value of two means that the number increased by 200%, i.e. the number of asylum seekers trebled. *Source:* Destatis, AZR.

4.2 Measuring Social Cohesion

Conceptual Issues Despite a voluminous literature on the topic, no generally accepted definition of social cohesion exists yet. The measure used in this study is in line with one of the earliest definitions of social cohesion, which focuses on the presence of social bonds and the absence of social conflict Durkheim (1897). It also incorporates other aspects of social cohesion suggested by later studies, including societal cooperation (Cooley, 1909), the identification of one individual with others with similar characteristics (Freud, 1921), the desire to maintain one's group affiliation (Festinger et al., 1950), or an overlap in the friendship networks of different members of society (Granovetter, 1973). A related and more contemporary definition is given by Van der Meer and Tolsma (2014), who emphasize the interconnectedness between individuals, focusing on the feelings of commitment, trust, and reciprocity, as well as individual participation in networks and civic organizations. In this paper, we use an empirical measure of social cohesion that is inspired by these definitions and is similar to those used in many studies described in Section 2, we draw on individual-level survey data about social attitudes and behaviors, including self-reported trust, positive reciprocity, willingness to cooperate, or attitudes towards immigrants. Moreover, we complement these aspects of social cohesion by analyzing county-level trends in anti-immigrant violence.

Individual-level Panel Data We measure social cohesion based on individual-level data from the German Socio-Economic Panel (SOEP) (Goebel et al., 2019). The SOEP is a longstanding annual panel survey that is representative of the German population and includes rich information on people's attitudes and perceptions. Importantly for our study, it asks respondents several questions about social attitudes and values in five-year intervals since 2003. The last two waves were in 2013 and 2018, which means that we observe the attitudes of the same people before and after the inflow.

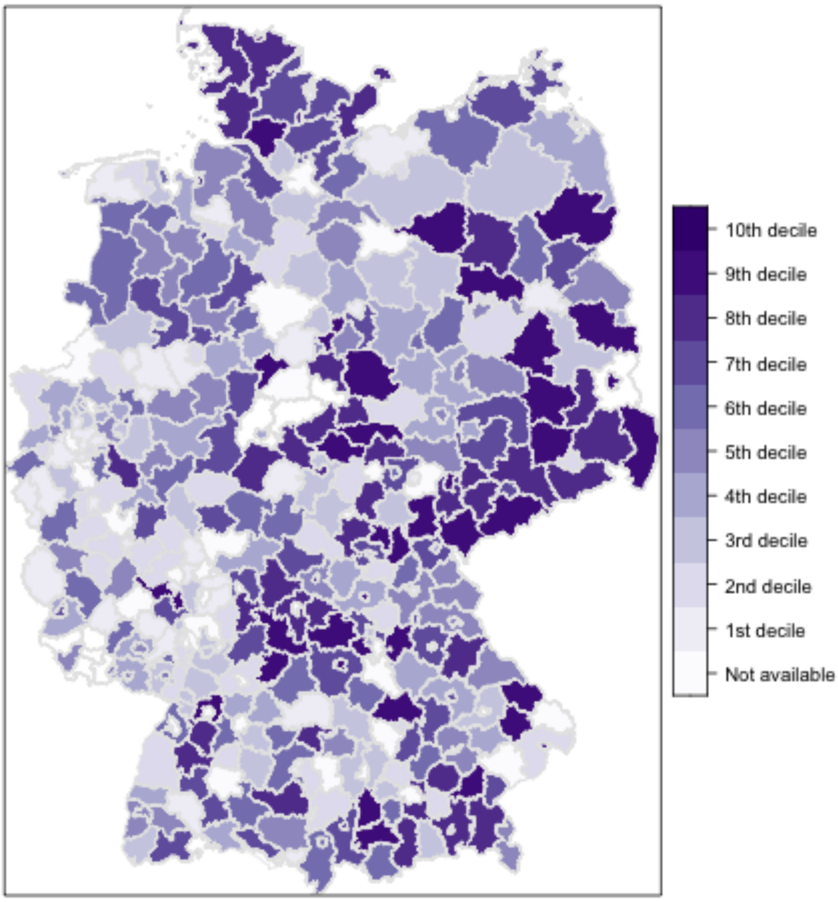


Figure 3: Geographic distribution of the inflow 2014-2016, relative to 2014.

Notes: This map shows the geographic distribution of our treatment, i.e. the increase in the number of asylum seekers between 2014 and 2016, relative to 2014, by county. *Source:* Ausländerzentralregister, persons seeking protection.

We use six survey questions on various aspects of social cohesion. Three questions indicate a person's general views on other members of society, namely questions on (i) whether people can be trusted, (ii) whether people are helpful or act in their own interest, or (iii) whether people are fair or exploit you. These questions refer to other members of society in general, not specifically immigrants or natives. As a proxy for a person's view about immigrants, we use a question on whether one should exert caution towards foreigners. To capture safety concerns — a central argument of conflict theory — we use a question on whether a person frequently worries about crime. Finally, we consider the question of whether a person has donated money to charity in the previous year, which proxies for a person's commitment to a common cause.

With each question, respondents are presented with mutually exclusive answer options that differ between questions. For example, for the question whether "people can generally be trusted", respondents could choose between four options, ranging from "disagree completely" to "agree completely", whereas questions about concerns about crime and job security offered three choices — "not concerned at all", "somewhat concerned" or "very concerned." To facilitate the analysis, we convert all responses into binary indicators. For all questions except the one on perceptions of crime, a value of one represents an answer that is consistent with a higher level of social cohesion. For example, for the question about trust, we assign a value of one when a person agrees or completely agrees that people can be trusted, and zero otherwise. For the question "Do you believe that most people i) exploit you or ii) are fair" we assign a value of one if a respondent states that people are fair and zero otherwise. For the variables that express a person's concern with crime, we assign a value of one if the person is very concerned about crime, and zero if they are somewhat concerned or not concerned at all. The precise wording of the questions along with the answer scales and the definition of the binary indicators can be found in Appendix A.1. In Appendix D.3, we perform a robustness check whereby we code answer options "slightly agree" and "somewhat concerned" as one.

In choosing how to code survey responses, researchers face a trade-off. Having binary outcomes facilitates the comparison of the effect sizes across different outcomes, and allows one to use simple methods such as linear probability models or probit or logit. The downside is that binary indicators may not capture subtle changes in a person's perceptions. For example, if a person's self-reported trust changes from "agree completely [that people can generally be trusted]" to "agree", our binary indicator would not capture this change. The alternative would be to have several mutually exclusive indicators for the different answer options and to use appropriate methods such as ordered probit. In our judgment, it is more useful to have results that are comparable across outcomes and to use simpler yet more transparent methods, which is why we choose to construct binary indicators and estimate linear probability models.

The SOEP includes geo-identifiers for a person's county of residence on the day of the interview. We link the survey data to the asylum seeker inflow data based on a person's county of residence in 2013.

Data on Anti-Immigrant Violence To investigate whether the inflows of asylum seekers affect natives' behavior towards foreigners — and not only their attitudes — we use information on anti-immigrant violence in Germany. We use a geo-referenced event dataset reporting all instances of anti-immigrant violent actions that have been documented by the project *Mut Gegen Rechte Gewalt* by the Amadeu Antonio Foundation. The foundation collected information on anti-immigrant incidents such as assaults, attacks against refugee housing, and arson, as well as anti-immigrant demonstrations. For each incident, the database records information on the time, location, and number of victims and perpetrators as well as a description of the incident and a link to the original source. The information was mostly taken from newspaper articles, press releases by the German police, parliamentary interpellations, as well as publicly accessible reports by local and regional organizations offering advice to victims of right-wing violence. For our analysis, we use a dataset provided by Benček and Strasheim (2016), who compiled the database from the Foundation from 2013 onward.

Figure 4 shows the overall number of anti-immigrant incidents in Germany between 2014 and 2017 as well as the number of asylum applications per month. The number of incidents was low until mid-2015 and increased in the second half of 2015 when most asylum seekers arrived in Germany.

The number of incidents increased sharply in early 2016 and gradually declined to its pre-2015 level in 2017. A recent study by Frey (2020) suggests that this sharp increase was caused by the events in Cologne on New Year's Eve 2015/16. In Appendix B, we present additional descriptive statistics on the number of incidents in different categories as well as the frequency of events per year and county. By far the largest number of incidents were attacks on refugee housing. Other incidents such as arson or assaults play a minor role in explaining the pattern in Figure 4. Regarding the frequency of anti-immigrant violence, the median county experiences 5.6 incidents per 100,000 inhabitants per year, although there is considerable variation in the number of incidents. There are few counties with zero incidents, whereas the majority ranges between one and 20 incidents per 100,000 inhabitants per year.

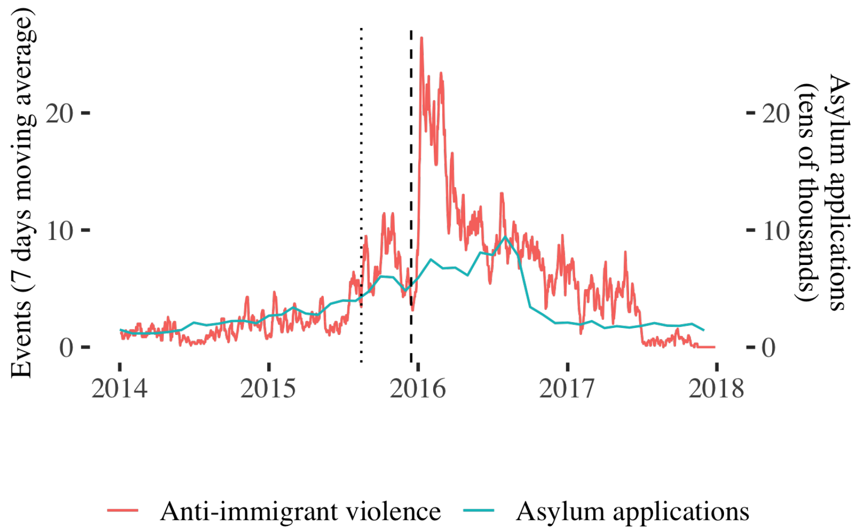


Figure 4: Anti-immigrant Violence, 2014-2017

Notes: The graph displays the daily number of anti-immigrant incidents in all of Germany (left scale) and the number of asylum applications per month (right scale). Violence data have been smoothed with a 7-day moving average. The vertical lines indicate Merkel's announcement that Germany suspends the Dublin Regulation, and the New Year's Eve 2015/16, during which a series of sexual assaults occurred in several German cities. *Source:* Benček and Strasheim (2016) based on data provided by the Amadeu Antonio Foundation.

5 Empirical Strategy

Our goal is to quantify the effect of an increase in the local number of asylum seekers on social attitudes and anti-immigrant violence. In general, identifying the causal effect of immigration is challenging because the same factors that attract migrants may also affect the outcomes of interest. For example, migrants may be attracted to cities that offer high wages, resulting in a positive correlation between immigration and wages. However, this correlation reflects the sorting of immigrants rather than the causal effect of immigration. Causal identification requires that the assignment of migrants across areas be as good as random and, thus, independent of local conditions that could influence the migrants' location choices.

Inflows of asylum seekers are typically less plagued by such endogeneity concerns because many governments have rules in place that determine how many asylum seekers are assigned to what place. Such assignment rules may not be random, but they make it difficult for migrants to deviate and move to a different place. Moreover, assignment rules make it difficult for local authorities to lobby to receive fewer immigrants. As explained in Section 3, the assignment rules in Germany have two features that are potentially useful for causal identification, namely that incoming asylum seekers cannot choose their initial place of residence, and that the number of asylum seekers assigned to an area is not based on current economic or political conditions. Gehrsitz and Ungerer (2022) test whether the local inflows in 2015 can be predicted by economic or political variables measured before 2014, and find very few significant predictors. Moreover, in Figure 2 we have provided evidence that the assignment rules were largely adhered to. The number of asylum seekers who were assigned to counties in 2015/16 was roughly proportional to the number of asylum seekers in a county in 2014, even though the number of newly assigned asylum seekers was often a multiple of the number of asylum seekers in earlier years.

For the identification of a causal effect, we use individual- and county-level panel data and estimate a difference-in-difference model. The model compares the outcomes of areas with high vs. low inflows over time, before and after the inflow. The idea behind this identification strategy is that the trajectory of outcomes in low-inflow areas after 2014 provides a counterfactual for the trajectory of high-inflow areas — that is, it predicts the trajectory of outcomes for high-inflow areas had they received low inflows. An important advantage of this identification strategy is that it does not require quasi-random assignment of the local inflows of asylum seekers. The identification assumption is parallel trends — that is, after the inflow, outcomes in high and low-inflow areas would have moved the same way had the inflow not happened or been smaller. This assumption is not testable, although we perform some diagnostics tests in support of it.

5.1 Difference-in-Differences: Social attitudes

We use the SOEP to estimate the effect of the inflow of asylum seekers in 2015/16 on self-reported social attitudes and values. We exploit the panel structure of the data and estimate a difference-in-difference regression of the form

$$y_{ict} = \beta(\text{asylum inflow}_c^{14-16} \times \text{ post}_t^{2014}) + \alpha_i + \alpha_t + \varepsilon_{ict}, \tag{2}$$

whereby y_{ict} is the outcome of person i who resided in county c in 2013, and whose outcomes we see in year t. To isolate the variation within a person over time, we condition on a set of individual and year fixed effects, α_i and α_t, which absorb time-invariant individual characteristics as well as changes in the outcome that are common to all individuals. The regressor of interest is the interaction between the inflow of asylum seekers and a *post* dummy that equals unity in all years after 2014 and zero in years up until 2014. The coefficient β is identified from variation across counties in the change in the number of asylum relative to the number before 2014. In other words, by including fixed effects, we estimate our coefficient of interest by comparing counties with a similar number of asylum seekers before 2014 but different increases in the number of asylum seekers in 2015/16.

The error term ε_{ict} captures all the determinants of the outcome that are not captured by the fixed effects. To account for the serial as well as spatial correlation in the error terms of people living in the same county, we cluster the standard errors at the county level.

Our coefficient of interest is β, which captures the effect of a 100% increase in the number of asylum seekers in a county on the probability that our outcome takes value one after 2015 relative to that person's outcome before 2015. For instance, when the outcome is trust, an estimate β of 0.01 means that doubling the number of asylum seekers in a person's county of residence increases the likelihood that the person agrees that people can be trusted by one percentage point.

The coefficient β can only be interpreted as causal under the parallel trends assumption. It requires that, in absence of the asylum seeker inflows, perceptions would have evolved the same way in high- and low-inflow areas. In other words, if we saw a gap in perceptions opening up after 2015, the assumption is that this gap is only due to the refugee inflows. This is an important advantage of a difference-in-difference design compared to cross-sectional designs: the difference-in-difference design does not require the assumption that the inflow of immigrants is as good as randomly assigned.

Although the parallel trends assumption is not testable, we argue that it plausibly holds in the German context. For everyone involved, a sudden inflow of one million asylum seekers was completely unexpected. Within a few weeks, German states were forced to find accommodation, which is why many states deviated from their policy to assign asylum seekers to municipalities based on population size and often assigned them based on the availability of suitable buildings. This procedure often led to assignments that were independent of local conditions. Moreover, asylum seekers cannot choose their initial place of residence, which excludes a typical identification challenge of studies on immigration, namely that migrants deliberately choose to settle in a particular place. In Appendix D.1, we run semi-parametric difference-in-difference regressions, which allow us to inspect pre-trends in the outcomes before the inflow. Overall, there is no evidence of systematic pre-trends in outcomes before the inflow.

5.2 Anti-immigrant violence

To estimate the effect of the inflow of asylum seekers on violent behaviors against immigrants, we use data on anti-immigrant incidents from the Amadeu Antonio Foundation. Our dataset allows us to follow the monthly evolution of anti-immigrant violence in Germany between 2014 and the end of 2017.

Our goal is to determine whether the monthly number of violent anti-immigrant incidents grows more substantially in counties that received more asylum seekers during the 2014-2016 period. To do so, we estimate the same difference-in-difference regression as in Equation (2), although the unit of observation is now a county rather than an individual. We also estimate a more flexible difference-in-difference model

$$y_{ct} = \sum_{t \neq \text{Dec 2014}} \beta_t \text{ asylum inflow}_c \times D_t + \alpha_c + \alpha_t + \epsilon_{ct}, \tag{3}$$

whereby y_{ct} is the number of violent anti-immigrant events per capita in county c and month t. Our treatment variable is the percentage change in the number of asylum seekers by county, which we interact with a set of month dummies. We set December 2014, the month before the migration wave started, as the base category. In this model, the coefficients β_t indicate the change in the number of anti-immigrant incidents between December 2014 and month t in areas where the number of asylum seekers doubled versus the change in areas where the number of asylum seekers remained constant.

The estimates of β_t in periods before January 2015 can be used as a diagnostics check in support of the parallel trends assumption. If they hover around zero, this is evidence — but no proof — that the parallel trends assumption holds. In contrast, if some of the coefficients are different from zero, this may indicate that areas with high and low inflows of asylum seekers had different trends in violence before the inflow and, thus, may not be comparable.

5.3 Reduced-form Interpretation of the Estimates

In both models, the estimates are to be interpreted as reduced-form effects. The inflow of asylum seekers may have directly affected attitudes and anti-immigrant violence. However, it is also plausible that it had indirect effects, for example by changing political decisions, starting political movements, or triggering events that in turn affected attitudes. For example, the large initial inflow may have contributed to Germany's efforts to close the entry route via the Balkans, which may have affected subsequent flows as well as people's attitudes. Another example is the rise of the far-right *Pegida* movement, which was amplified by the events in Cologne on New Year's Eve 2015/16. This movement was largely driven by the initial inflow of asylum seekers, and it may have changed people's attitudes. The difference-in-difference estimate comprises the direct effect of the inflow on attitudes as well as indirect effects through events that were affected by the inflow. Events like the Cologne New Year's Eve represent causal channels — also called *mediators* — through which the inflow affects the outcome. It is difficult to disentangle the contribution of various mediators, and we do not attempt to do so. In the interpretation of our estimates, we take events that were affected by the inflow as given. We cannot construct a counterfactual of what the effect would have been had the Cologne New Year's Eve or the closing of the Balkan route never happened. One might be tempted to suggest that we should control for such events. However, this controlling for mediators — also known as the *bad control problem* — is not advisable as it can introduce or exacerbate a selection bias.

6 Results

6.1 Effects on Individual Attitudes

Figure 5 displays the estimation results for the effect of the inflow of asylum seekers on social attitudes. Each row displays the point estimate and 95% confidence interval for the coefficient β in Equation (2) for different outcomes. Each point estimate indicates the estimated effect of a doubling of the number of asylum seekers in a respondent's county on the likelihood that they agree to the statement on the left. To benchmark these effects, the graph also reports the share of the sample that agree with the statement. The corresponding estimation results are also provided in a table in Appendix C.

Overall, the results do not indicate large effects of the inflow of asylum seekers on social attitudes. The point estimates for trust, the questions of whether people are helpful and fair, and the questions about caution towards foreigners and worries about crime are close to zero and statistically insignificant. The only coefficient that is large and statistically significant is the one for donations. A doubling of the number of asylum seekers in a respondent's county reduces the likelihood that someone makes a donation in a given year by around 1.8 percentage points, which is about 4% of the mean.

Figure 6 displays the heterogeneous effects for counties that had high vs. low employment rates and high vs. low vote shares for the populist party AfD before the inflow.[10] These graphs reveal some interesting differences across areas. In areas with high employment rates, the inflow had a positive effect on social attitudes, namely trust, and perceived fairness, whereas, in places with below-median employment rates, the effects are small and statistically insignificant. In places with above-median vote shares for the AfD, a larger inflow of asylum seekers led to a more negative anti-immigrant sentiment, a greater concern about crime, and lower donations. In areas with below-median AfD vote shares, these effects are small and statistically insignificant.

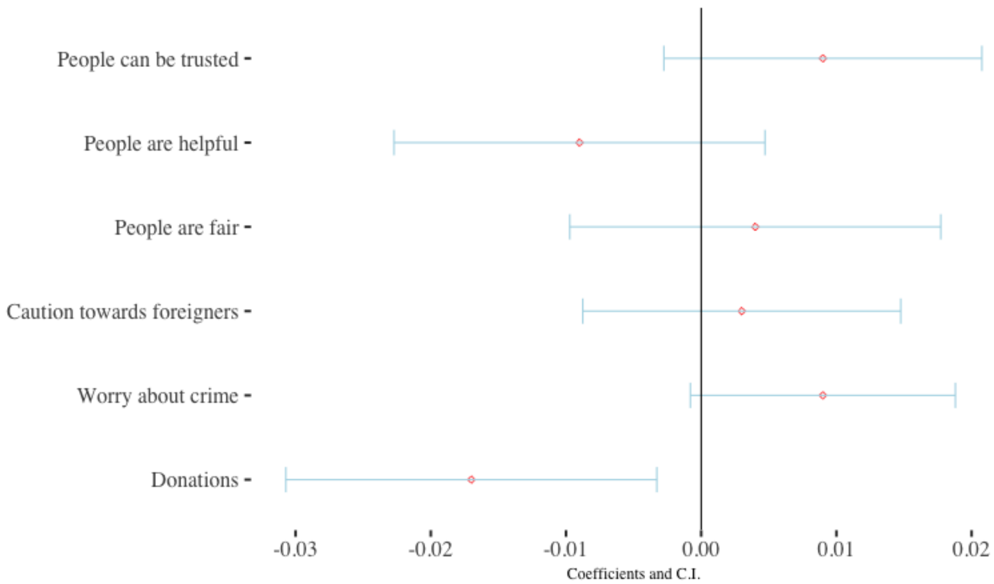
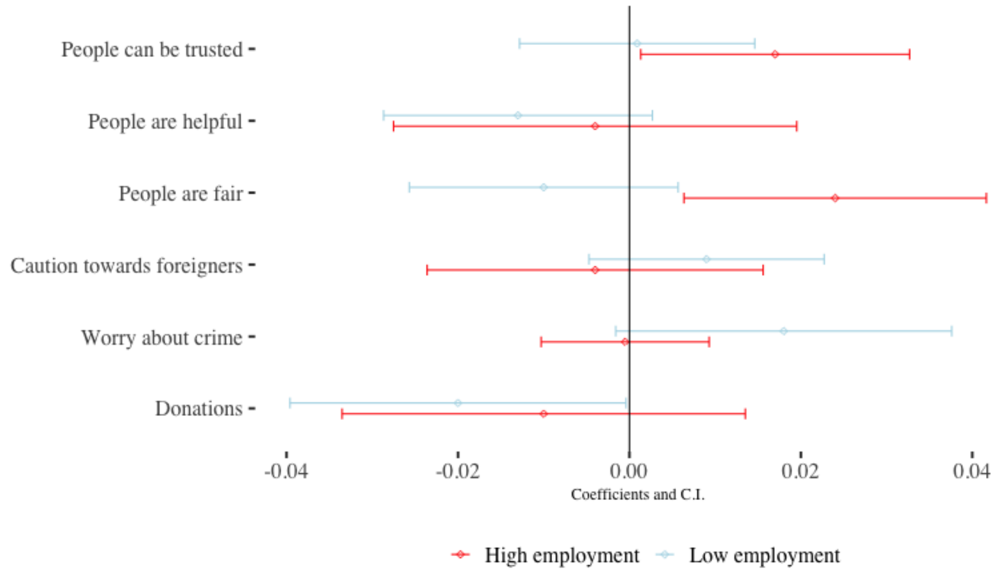


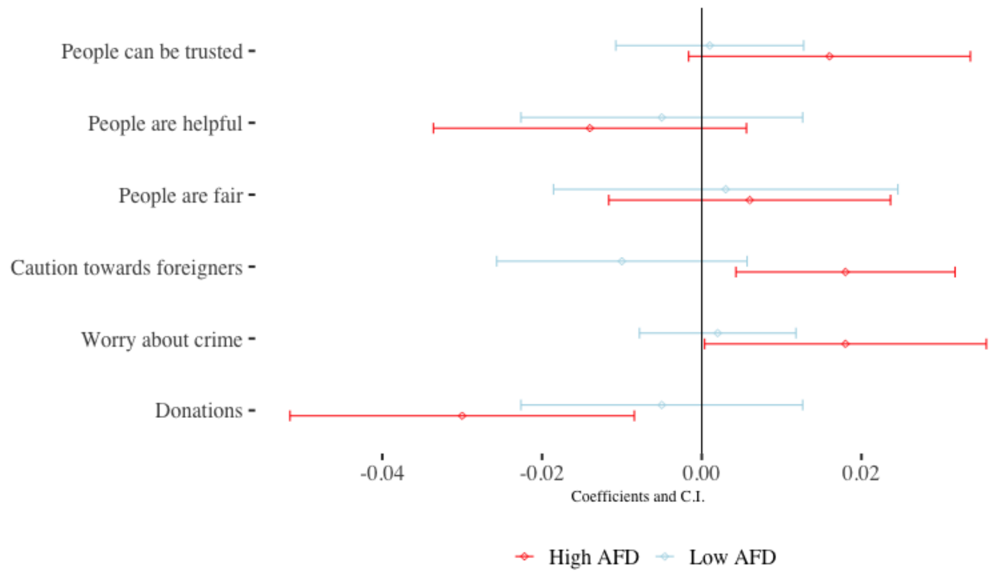
Figure 5: The Effect of the Inflow of Asylum Seekers on Individual Attitudes

Notes: This graph displays the point estimates and 95% confidence intervals for the difference-in-difference effect β in Equation (2). Each outcome is a binary indicator that equals unity if a respondent agrees to a given statement. Each estimate is the result of a separate regression of the indicators listed on the left on the interaction of the asylum seeker inflow in a respondent's county of residence and an indicator for the post-2014 period, individual and year fixed effects. A coefficient of 0.01 means that a doubling of the number of asylum seekers in a county increases the likelihood that a respondent agrees to a statement by one percentage point. Standard errors are clustered at the county level.

[10] The AfD started out in 2012/13 as a eurosceptic party that gradually turned into a right wing-party. Research shows that although its party program for the 2013 federal election was mainly conservative, in its communication the party used a populist rhetoric from the start (Franzmann, 2016).



(a) Low and High employment counties.



(b) Low and High AfD votes counties.

Figure 6: Heterogeneous Effects on Individual Attitudes

Notes: The figure plots the coefficients and confidence intervals from a series of regressions in which the outcomes are different measures of social attitudes and values. For each outcome, we run separate regressions for individuals living in counties whose employment rate in 2011 was below and above the median. For each outcome, we run separate regressions for individuals living in counties whose share of votes going to AfD during the 2013 general elections was below and above the median.

6.2 Effects on Anti-Immigrant Violence

In a second step, we analyze whether the inflow of asylum seekers in Germany in 2015/16 affected anti-immigrant violence. Figure 7 displays the estimates of the flexible difference-in-difference model in Equation (3). The outcome is the number of violent anti-immigrant incidents per 100,000 inhabitants per month. We regress this outcome on the increase in the number of asylum seekers in a county between 2014 and 2016, interacted with month dummies.

The coefficients before 2015 can be seen as placebo tests, as they reflect the effect of an increase in the number of asylum seekers on violence *before* the inflow happened. Reassuringly, all coefficients are close to zero and statistically insignificant, which suggests that counties with high vs. low inflows of asylum seekers had similar trends in anti-immigrant violence before the inflow. These tests corroborate the parallel trends assumption: given that the trends in violence were similar before the inflow, it appears reasonable that the trends would have continued in the same way had it not been for the inflow of asylum seekers.

The estimates after the inflow suggest that the inflow led to an increase in anti-immigrant violence. Throughout 2016 — and, thus, after the Cologne New Year's Eve events — the point estimates are consistently above zero, and they revert to zero in mid-2017. The effects in 2016 are around 0.1, which means that a doubling of the number of asylum seekers between 2014 and 2016 leads to 0.1 more attacks in a county per month per 100,000 inhabitants, or a bit more than one attack per year. This is a considerable effect, given that the median county experiences 5.6 incidents per 100,000 inhabitants per year.

Although the results in Figure 7 are compelling, a potential drawback of the underlying econometric model is its low statistical power. The regression requires the estimation of close to 50 coefficients. To gain statistical power, and to estimate the average effect after the inflow, we estimate a more restrictive difference-in-difference model similar to the one in Equation (2). Table 1 reports the estimates for the coefficient of the interaction between the increase in the number of asylum seekers and a dummy for the period post-2014. Our estimates indicate that doubling the number of asylum seekers in a county leads to additional 0.05 violent anti-immigrant events per 100,000 inhabitants per month. Considering that the average monthly number of violent anti-immigrant events by county is 0.17 for every 100,000 inhabitants, our estimated effect represents an increase by around 30% of the mean. The estimates are robust to the inclusion of separate sets of county and date fixed effects as well as county-specific time trends.

In Table 2, we show the estimates for the effect in counties with different prior employment rates and vote shares for the populist party AfD. A county is considered to have high employment if its employment rate in 2011 was above the median. Likewise, it is considered to have a high vote share for the AfD if the vote share in the 2013 federal election was above the median. The results show that the effect is considerably stronger in counties with low employment rates and strong support for the far-right.

Is the effect mechanical? In robustness checks, we address two challenges to our analysis. First, the impact of immigration on anti-immigrant violence may be seen as "mechanical." We use quotation marks here on purpose because violence is a willful act that is committed by an individual or a group

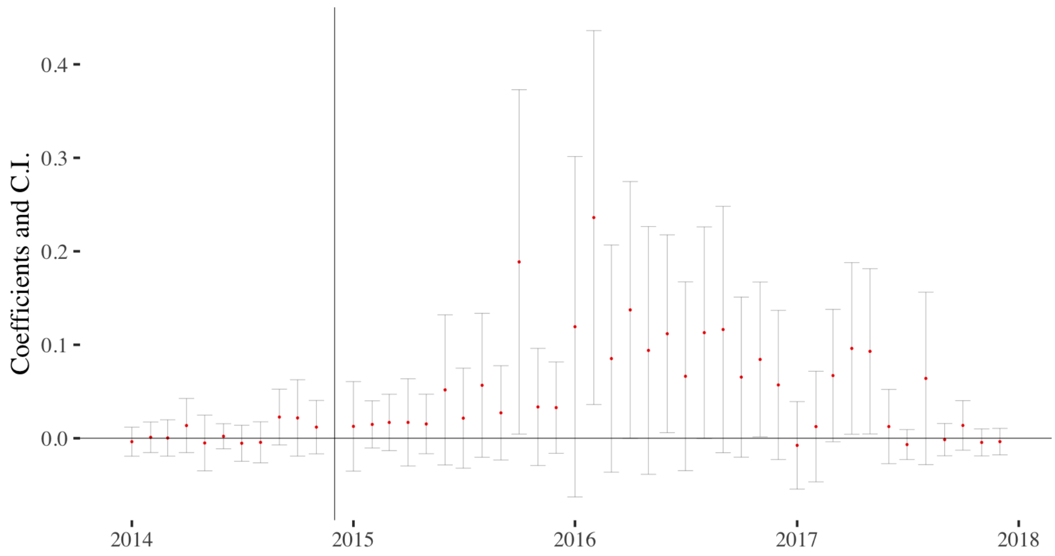


Figure 7: Flexible DD estimation: Anti-immigrant violence

Notes: This graph displays the point estimates and 95% confidence intervals based on the flexible difference-in-difference regression in Equation (3). The outcome is the number of violent anti-immigrant incidents per county per month per 100,000 inhabitants. The treatment is the increase in the number of asylum seekers between 2014 and 2016. The base period is December 2014. Standard errors are clustered at the county level.

and it seems inappropriate to speak of a mechanical relationship when a willful act is involved. No one forces people to commit more violence against immigrants when there are more immigrants around. A related question is whether the observed increase is due to there being more potential targets or due to an increase in anti-immigrant sentiment among the native population. A study by Frey (2020) provides evidence that the inflow — and especially the salience of the Cologne New Year's Eve assaults — ignited violence in hitherto peaceful communities. We provide two additional pieces of evidence that go against a purely mechanical effect. First, as shown in Figure 4 the growth in anti-immigrant violence was disproportionate compared to the growth in the number of asylum seekers. Monthly numbers of violent events reach their peak at the start of 2016 when they are 20 times more frequent than in January 2014. On the contrary, the number of monthly asylum applications never grows above six times its initial value. Moreover, the number of asylum seekers increased to a similar extent in areas with high or low employment rates, or with high or low vote shares for the extreme right. If the effect was mechanical, we would expect the same effect regardless of the employment rate or political preferences. Second, as shown in Figure 8, the surge in anti-immigrant violence is concentrated among the 10% of counties with the largest increases in the number of asylum seekers. In this figure, we carry out a non-linear difference-in-difference estimation by interacting the post dummy with dummies for deciles of the distribution of asylum seeker inflows. The concentration in the top decile means that in many counties with considerable increases in the asylum seeker population — the median increase was a doubling — there is no effect on anti-immigrant violence, whereas we see a sharp increase in violence in counties where the relative size of the inflow was particularly large.

Table 1: Monthly anti-immigrant violence events per capita.

	(1)	(2)	(3)	(4)
Treatment x Post	0.054***	0.054***	0.054***	0.069**
	(0.019)	(0.019)	(0.019)	(0.032)
County FE		Yes	Yes	Yes
Date FE			Yes	Yes
County time trends				Yes
Observations	18,864	18,864	18,864	18,864
Adjusted R^2	0.029	0.124	0.223	0.225

Notes: The table shows the outcomes of difference-in-differences regressions in which the outcome is the monthly number of anti-immigrant violence events per 100,000 inhabitants. The regressor of interest is the interaction between the percentage change in the number of asylum seekers between 2014 and 2016 and a dummy for the post-2014 period. Standard errors are clustered by county. Date fixed effects refer to year-month combinations. *Significance levels:* * = 0.1; **= 0.05; ***= 0.01.

6.3 Discussion of Main Results

Our findings can be summarized as follows. We find no evidence that the inflow of over one million asylum seekers affected social attitudes and perceptions such as trust, perceived fairness, or caution towards foreigners. This result is remarkable given the strong turn in German public opinion, from very positive to quite negative within a few months. The results suggest that the size of the local inflow had no profound effect on many dimensions of social cohesion. However, our results highlight a strong effect on a more extreme expression of anti-immigrant sentiment, namely anti-immigrant violence. Among areas that had similar levels of anti-immigrant violence before 2015, we see a disproportionate increase in violence after 2015 in places with many asylum seekers. This effect is stronger in places with low employment levels and a high share of right-wing voters.

The results on individual attitudes are consistent with the findings in previous studies on migration and social cohesion. The burgeoning literature on ethnic diversity and social attitudes — summarized in Section 2.1 — has produced mixed results; some studies find that greater ethnic diversity undermines social trust, whereas others find no effect. Similarly, the effects of forced migration on various economic outcomes in the host countries have been found to be small. Verme and Schuettler (2021) perform a meta-analysis of published papers on the economic effects of forced migration in the host countries. The majority of results regarding wages, employment, and rents are insignificant. If anything, there is a small positive effect on rents and a small negative effect on household welfare. Against this backdrop, it is perhaps not surprising that we do not find significant effects on social attitudes.

Another reason for the small and insignificant effects is the salience of the local presence of asylum seekers. Although the inflow of asylum seekers dominated the national media in 2015/16, it is unclear whether a change in the *local* number of asylum seekers in a county was noticed by most

Table 2: Monthly anti-immigrant violence events per capita.

	Low empl	*High empl.*	*Low AFD*	*High AFD*
	(1)	(2)	(3)	(4)
%Δ refugees 14-16 x Post	0.085**	0.027*	0.030**	0.086*
	(0.040)	(0.016)	(0.012)	(0.049)
County FE	Yes	Yes	Yes	Yes
Date FE	Yes	Yes	Yes	Yes
Observations	8,928	9,648	9,504	9,264
Adjusted R^2	0.248	0.185	0.182	0.241

Notes: The table shows the outcomes of difference-in-differences regressions in which the outcome is the monthly number of anti-immigrant violence events per 100,000 inhabitants. The regressor of interest is the interaction between the percentage change in the number of asylum seekers between 2014 and 2016 and a dummy for the post-2014 period. In Columns (1) and (2), we split the sample into counties below and above the median employment rate in 2011, respectively. Similarly, Columns (3) and (4) show the results for counties below and above the median share of AfD votes in the general election of 2013. Standard errors are clustered by county. Date fixed effects refer to year-month combinations. *Significance levels:* * = 0.1; **= 0.05; ***= 0.01.

people. In other contexts, where the local presence of asylum seekers is more salient, effects on individual attitudes are more likely. An example of such a context is given by Hangartner et al. (2019), who study the effect of exposure to asylum seeker flows on Greek islands. On islands that are close to transit routes for asylum seekers, they document a significant surge in anti-immigrant attitudes.

Our second key finding is that the local presence of asylum seekers led to an increase in anti-immigrant violence, in particular attacks on immigrant accommodation. This result suggests that the local presence of asylum seekers *does* trigger negative reactions. In particular, the effect is stronger in areas with lower employment rates and higher vote shares for right-wing populist parties. Overall, our findings suggest that, while the population at large does not react to the presence of asylum seekers, a small segment of the population shows extreme reactions. These findings are consistent with other studies on anti-immigrant violence, for example, Entorf and Lange (2019) and Frey (2020), who show that the largest increases in anti-immigrant violence can be observed in places with a low initial number of asylum seekers and low levels of hate crimes before the inflow.

6.4 Robustness Checks and Additional Results

Results based on data on the assignment of asylum seekers In Appendix D.2, we report regression results whereby the regressor of interest is based on an alternative data source. Instead of using data from the Central Register of Foreigners, we use data on the county-level assignment of asylum seekers between January 2014 and December 2015 compiled by Gehrsitz and Ungerer (2022) from administrative records from state ministries. The regressor of interest is the number of asylum

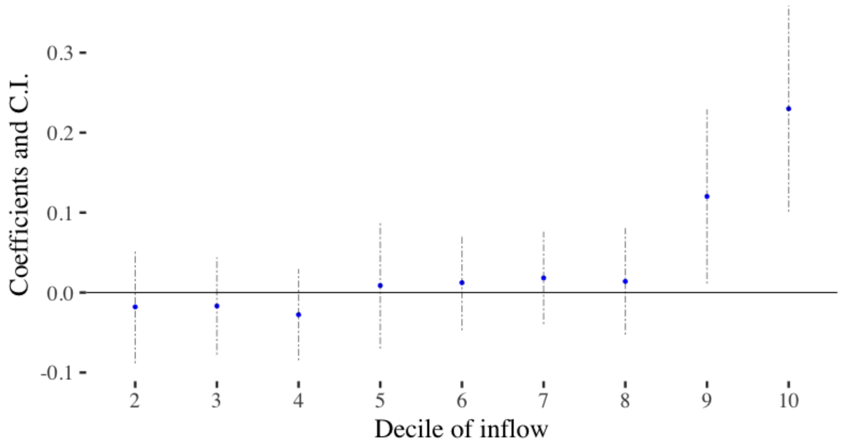


Figure 8: Anti-immigrant violence: Non-linear difference-in-differences.

Notes: This graph displays the point estimates and 95% confidence intervals based on a non-linear difference-in-differences estimation where we interact a county's treatment decile with a dummy for months after January 2015. The treatment is the change in the number of asylum seekers per capita between 2014 and 2016, relative to 2014. Standard errors are clustered at the county level.

seekers per 1,000 inhabitants that were assigned to a county during this period. Using this measure, we obtain results that are similar to our main results. We find virtually no effect on general indicators of social cohesion, and a small positive effect of an increase in the number of asylum seekers on anti-immigrant attitudes. Moreover, we find that the inflow significantly increased the incidence of anti-immigrant violence.

Alternative regressor: increase in the number of asylum seekers per capita We also investigate whether the results are sensitive to our choice of treatment and test the results of our regression using the change in asylum seekers per capita by county between 2014 and 2016 to measure treatment intensity.

Figure C.6 in the Appendix shows the coefficients obtained for our measures of individual social attitudes, which confirm that larger inflows of asylum seekers are not associated with significant changes in social attitudes at the county level. Moreover, Figure C.7 shows the estimates from a similar analysis of the effects on anti-immigrant violence. While the change after 2015 is less evident, the graph still suggests a clear increase in anti-immigrant violence — especially after January 2016.

Further robustness checks In Appendix D.3, we perform additional robustness checks. We show that the SOEP results are robust to changing the coding of the outcome variable. In the main analysis, we construct binary indicators that equal unity if a person agrees or strongly agrees to a statement, and zero otherwise. In the robustness check, we code all responses as one as long as a person slightly agrees, agrees, or strongly agrees. We also present the individual-level estimates with included county fixed effects, which address a potential challenge that respondents moved counties during the sample period.

A further challenge is the fact that not all counties are represented in the main sample, which may bias the estimates. In Appendix D.3, we address this challenge through a bounding analysis. We impute the missing regressor — the increase in the number of asylum seekers — with values at the minimum, 25th-, 50th-, and 75th percentile as well as the maximum of the observed distribution of county-level inflows. The results prove highly robust to this imputation. Only when we impute the missing values with the maximum are the estimates considerably smaller.

7 Conclusion

In this paper, we study how the sudden inflow of one million asylum seekers shaped social attitudes and anti-immigrant violence in Germany. Overall, our findings suggest that social cohesion — and in particular social trust — remained unaffected by the sudden arrival of a large number of asylum seekers, despite significant ethnic and cultural differences between the asylum seekers and the German population. However, the inflow of foreigners sparked a violent backlash from certain groups of the population. In particular, we observe a substantial growth in violent events directed at asylum seekers that suggests that segments of the German population strongly intensified their xenophobic behavior. Natives' self-reported attitudes towards migrants also deteriorated following the asylum seeker inflow, although the estimated effect appears modest.

In light of the (non-)effects on trust and other social attitudes, the often-expressed fear that large inflows of asylum seekers undermine the foundations of the host societies appears unfounded — at least in the short term studied in this paper. However, large immigration inflows can hurt attitudes towards out-groups, as proxied by survey responses on the need to be cautious when interacting with foreigners. While our estimates suggest that such an effect is small, decision-makers and civil society actors should focus on promoting policies that can foster inclusiveness and empathy with immigrants.[11]

At the same time, our results show that large inflows of asylum seekers can trigger violent reactions from parts of the host society. Violence against asylum seekers in Germany grew five-fold in the period we consider, which is considerably larger than the growth in the number of asylum seekers. Such a rapid increase in violence was not uniform across the country. Violent events increased more than proportionally to the number of asylum seekers assigned to each county, suggesting that larger assignments of asylum seekers are particularly prone to causing explosive backlashes. Moreover, counties with previous low employment rates and high support for far-right parties exhibited much stronger reactions to the arrival of asylum seekers. Finally, our estimates suggest that what triggered the surge in violence was the rapid growth in the *asylum seeker population*, rather than in the number of asylum seekers per capita.

Finally, where asylum seekers are resettled has substantial consequences. While the current assignment rules — mostly proportional to the local population — may be perceived as fair, they are likely not welfare maximizing. Our results add to a growing literature suggesting that data-driven

[11] For instance, Williamson et al. (2021), Adida et al. (2018) and Dinas et al. (2021) show that perspective-taking interventions — such as priming family immigration stories among natives — have been shown to increase support for refugees and inclusiveness in the United States and Europe. Audette et al. (2021) further show that narratives that highlight specific aspects of the experience of refugees in Kenya — such as the hardships faced and their shared opposition to terrorism — have positive effects on intergroup and policy attitudes.

policies based on the characteristics of assignment locations could vastly increase social welfare gains, foster integration, and reduce risks for migrants. Based on our estimates, assigning proportionally more asylum seekers to counties with strong labor markets and low support for far-right parties, while avoiding the most extreme county-level inflows[12] observed in Germany between 2014 and 2016, would have substantially decreased hate crimes. Similarly, Bansak et al. (2018) study resettlements in the United States and Switzerland and conclude that data-driven matching between asylum seeker and resettlement location characteristics could lead to substantial improvements in refugees' employment outcomes. Moreover, Ziller and Goodman (2020) consider the same context analyzed here and conclude that the assignment of refugees to communities where local government efficiency is high was less likely to lead to violent reactions.

[12]Our analysis shows that counties, where the asylum seeker population grew by more than 1.8 times during the period, exhibited more-than-proportional increases in violence.

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Appendix

A Data Appendix

A.1 Survey Questions in the SOEP

Table A.1 summarizes the construction of the outcome variables based on the survey questions from the SOEP. In each of the years in Column (4), respondents are asked the survey question in Column (2) and presented the mutually exclusive answer options in Column (3). We use the answer options to create binary indicators, whereby for all questions except 5)), a value of one indicates an answer consistent with greater social cohesion. With the question about concerns 5), a value of one indicates that people are very concerned about crime. The classification of the binary indicators is shown in parentheses in Column (3).

Table A.1: Construction of Outcome Variables in the SOEP

Variable Name (1)	Survey Question (2)	Answers (3)	Years (4)
1) People can be trusted	People can generally be trusted.	Disagree completely (0), Disagree (0), Agree slightly (0), Agree completely (1)	2003, 2005, 2013, 2018
2) People are helpful	Would you say that people usually...	People act in their own interest (0), People are helpful (1)	2003, 2005, 2013, 2018
3) People are fair	Do you believe that most people....	People exploit you (0), People are fair (1).	2003, 2005, 2013, 2018
4) Caution towards foreigners	When dealing with foreigners, it's better to be careful before trusting them.	Disagree completely (0), Disagree (0), Agree slightly (0), Agree completely (1)	2003, 2005, 2013, 2018
5) Worry about crime	How concerned are you about crime in Germany?	Not concerned at all (0), Somewhat concerned (0), Very concerned (1)	1994-2018
6) Donations	Did you donate money last year?	No (0), Yes (1)	2010, 2015, 2018

Notes: The table summarizes the construction of the outcome variables based on the SOEP survey questions. Column (3) reports the answer options that were given to the respondents. The numbers in parentheses indicate our classification of these answer options into a binary indicator. Column (4) reports the years in which each question was included in the survey.

A.2 SOEP: Descriptive Statistics

Table A.2 displays the descriptive statistics for the estimation sample. For each outcome, the sample includes respondents who we observe in all four survey rounds (2003, 2008, 2013, 2018).[13] Each observation is a respondent-year combination for around 4,500 respondents over four survey rounds.

In the estimation sample, the number of asylum seekers in a respondent's county increased by a factor of 1.26, i.e. it more than doubled. All outcomes are binary indicators, as discussed in Appendix A.1. The shares of respondents agreeing to a statement vary across outcomes. The means of the outcomes are relevant as benchmarks for the estimated effects.

We also list the respondents' characteristics, although we do not use these variables in the estimation. In general, the SOEP is representative of the German population. However, the share of foreigners appears low, which is because we only observe a person's nationality rather than their place of birth. If foreigners were counted as everyone who was born outside Germany to non-German parents, the share of foreigners would likely be higher.

Table A.2: SOEP - Descriptive Statistics

	Mean	SD	Min.	Max.	N
Outcomes:					
People can be trusted	.66	.47	0	1	83,403
People are helpful	.42	.49	0	1	82,115
People are fair	.43	.49	0	1	81,715
Caution towards foreigners	.87	.33	0	1	83,365
Worry about crime	.38	.48	0	1	316,665
Donations	.45	.49	0	1	61,737

Notes: This Table provides summary statistics on the SOEP dataset. We only include data from 2003, 2008, 2013 and 2018. The only exceptions are for the variable *Donations*, for which we use observations from 2010, 2015 and 2018, and the variable *Worry about crime*, for which we observe all years between 2003 and 2018.

A.3 Correlation Assignment vs. Economic Variables

Figure A.1 displays the correlation between the percentage increase in the number of asylum seekers between 2014 and 2016 and the local unemployment rate in 2014 as well as the county-level GDP per capita.

[13]The exception is *Donations*, for which the relevant survey years are 2010, 2015, and 2018.

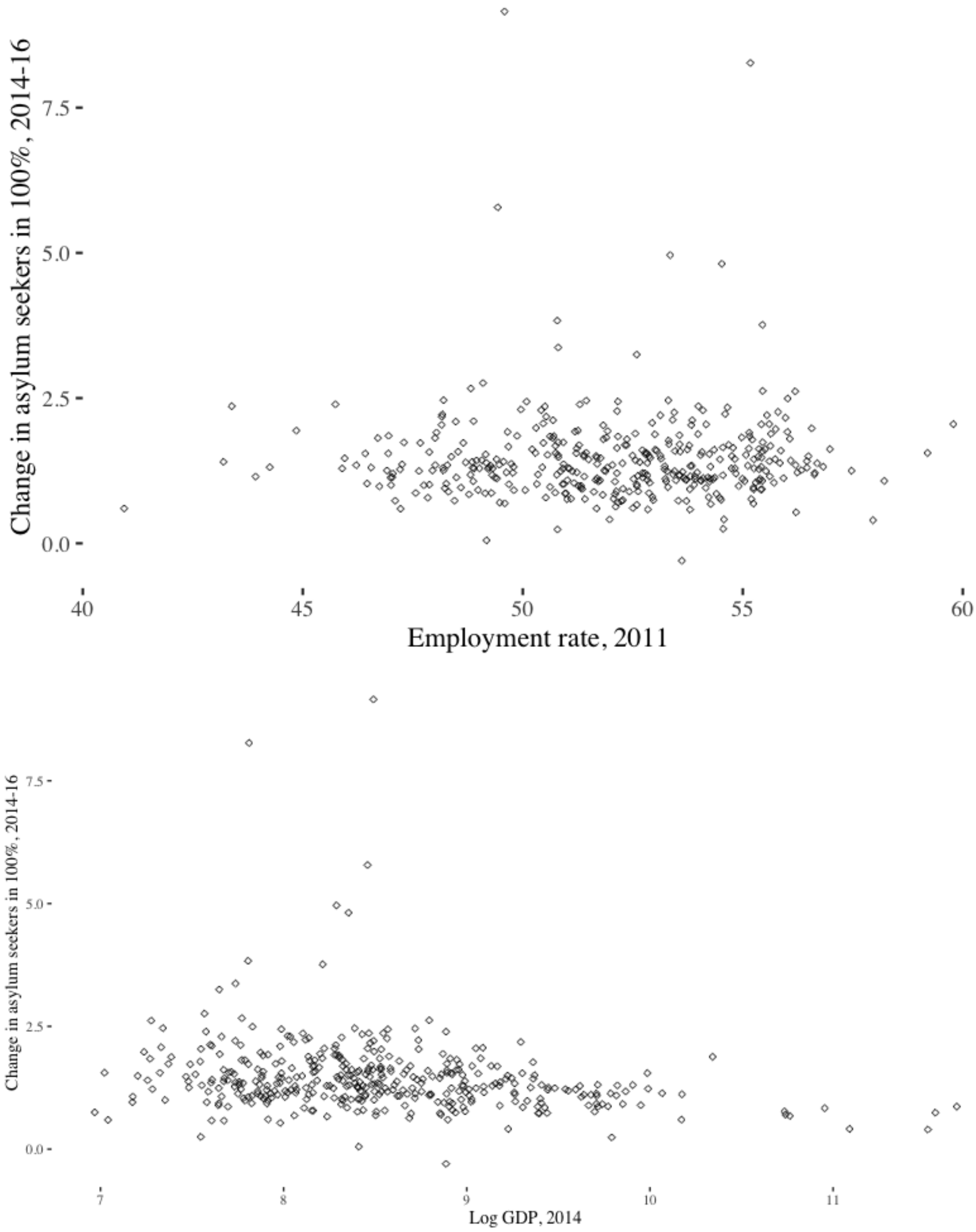


Figure A.1: Correlation between Inflows of Asylum Seekers and County Characteristics

Notes: The figure shows the correlation between the percentage change in the number of asylum seekers between 2014 and 2016, unemployment rates in 2011, and GDP in 2014, by county.

B More Descriptive Statistics

B.1 Anti-Immigrant Violence

Figures B.2 and B.3 present additional descriptive statistics about the frequency of anti-immigrant incidents over time and across counties. Figure B.2 displays the number of daily incidents in all of Germany for different categories. The majority of incidents are attacks against immigrant accommodation. Arson, assaults, and anti-immigrant demonstrations only play a minor role.

Figure B.3 shows the distribution of the average number of anti-immigrant incidents per 100,000 inhabitants per county. The distribution is right-skewed, with a median of 5.6 incidents, meaning that a handful of counties experience a large number of anti-immigrant incidents per year. Most counties experience *some* anti-immigrant violence; there are very few counties with zero incidents over the entire sample period.

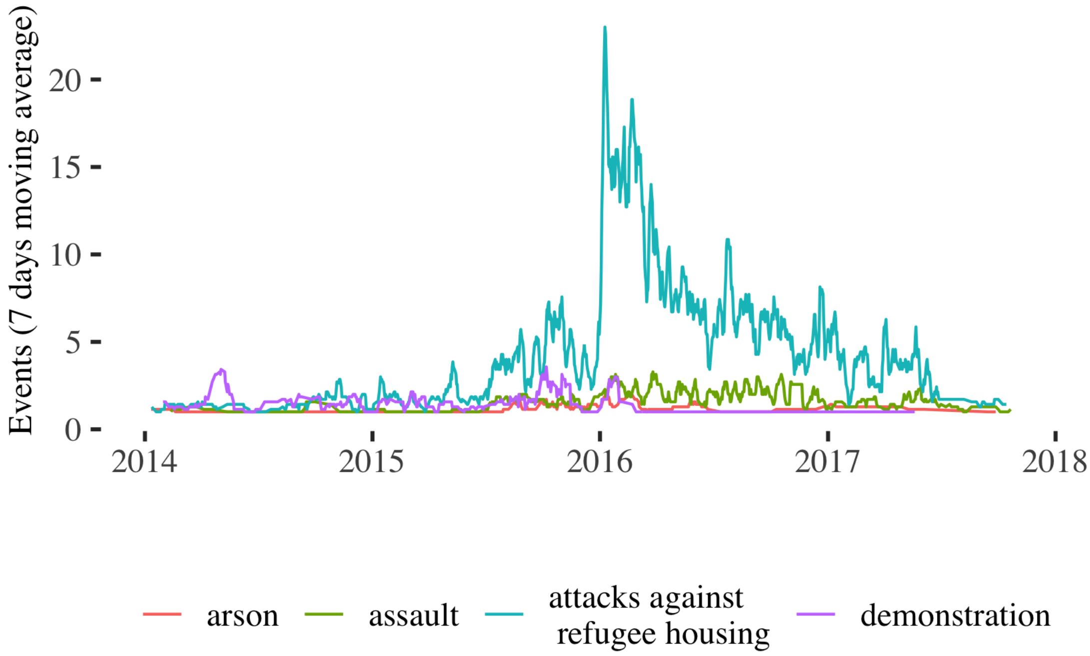


Figure B.2: Anti-immigrant violence by category, 2014-2017

Notes: This graph displays the daily number of anti-immigrant incidents for different types of incidents. Data are smoothed to a 7-day moving average. *Source:* Amadeu Antonio Foundation.

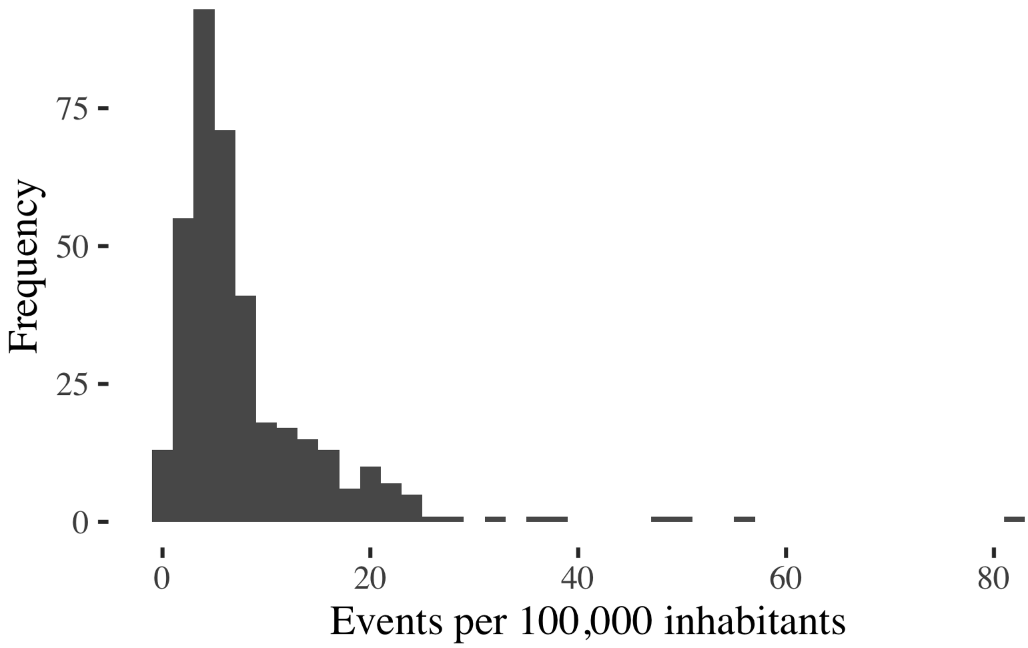


Figure B.3: Annual number of anti-immigrant incidents per 100,000 inhabitants, by county

Notes: The graph displays the distribution of the average number of anti-immigrant incidents per 100,000 across counties.
Source: Amadeu Antonio Foundation.

B.2 Employment Rates vs. Right-Wing Voting

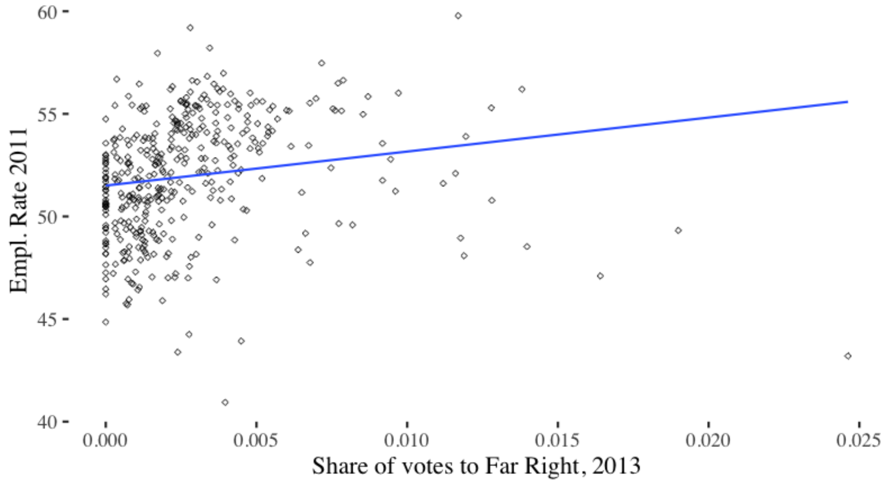


Figure B.4: Correlation: Employment Rates vs Far-Right Voting 2013

Notes: This graph displays the correlation between employment rates and voting for the far-right parties *NPD* and *Republikaner* in 2013 at the county level.

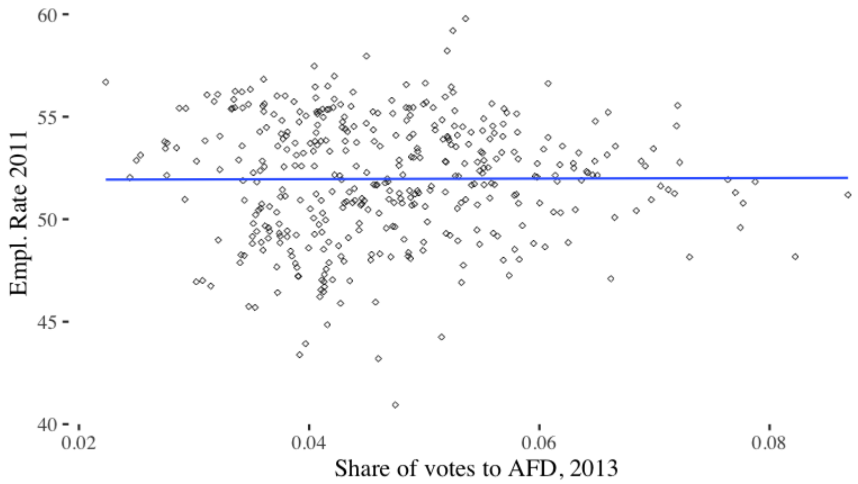


Figure B.5: Correlation: Employment Rates vs AfD Voting 2013

Notes: This graph displays the correlation between employment rates and voting for AfD in 2013 at the county level.

C Results: Tables and Graphs

This appendix reports additional estimation results for the effect of the inflow of asylum seekers on individual attitudes. Table C.3 reports the estimation results underlying Figure 5 along with heterogeneous effects in counties with high vs. low prior employment rates and high vs. low vote shares for the populist party AfD. Unlike in the figures reported in the main text, the regressions in Table C.3 include county fixed effects to account for the possibility that respondents moved to and from counties with different inflows.

Figure C.6 shows the difference-in-difference estimates whereby the asylum seeker inflow is measured per capita. The results are similar to those in the main text, although the effect on donations is no longer statistically significant. The effects on caution towards foreigners and concerns about crime are marginally significant but very small in magnitude.

Figure C.7 displays the estimates of a flexible difference-in-difference model whereby the treatment is the increase in the number of asylum seekers per capita between 2014 and 2016 in percent. The estimates are smaller than in the regressions where the treatment is the relative increase in the number of asylum seekers, but the overall pattern is the same.

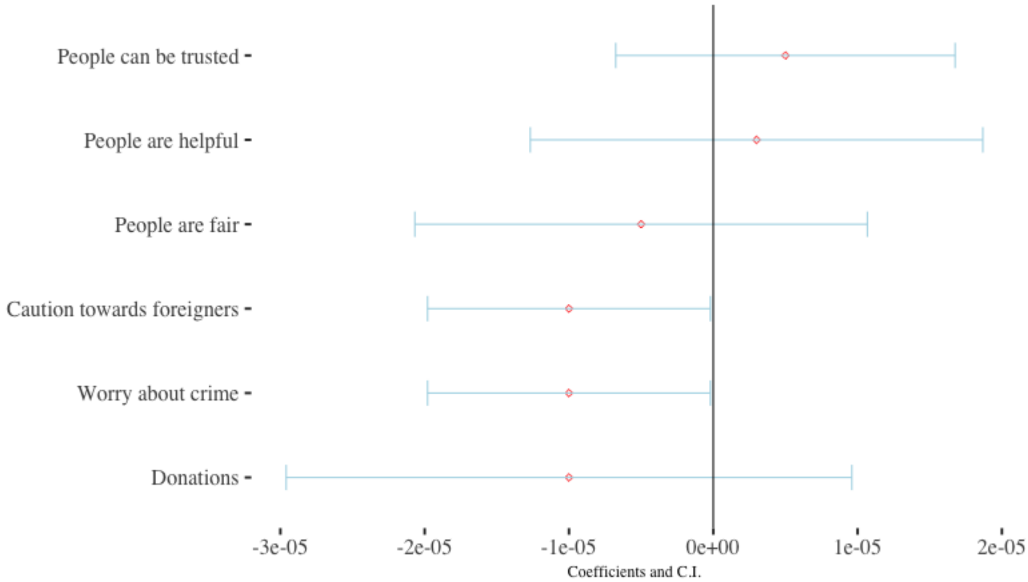


Figure C.6: The Effect of the Inflow of Asylum Seekers on Individual Attitudes

Notes: This graph displays the point estimates and 95% confidence intervals for the difference-in-difference effect β in Equation (2). Each outcome is a binary indicator that equals unity if a respondent agrees to a given statement. Each estimate is the result of a separate regression of the indicators listed on the left on the interaction of the asylum seeker inflow per capita in a respondent's county of residence and an indicator for the post-2014 period, individual and year fixed effects. Standard errors are clustered at the county level.

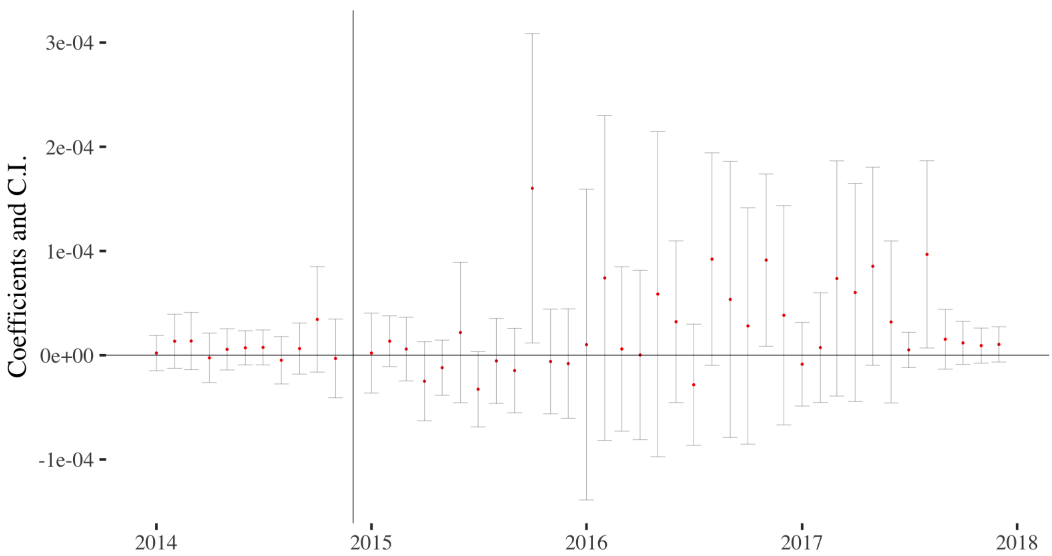


Figure C.7: Flexible DD estimation: Anti-immigrant violence, change in asylum seekers per capita.

Notes: This graph displays the point estimates and 95% confidence intervals based on the flexible difference-in-difference regression in Equation (3). The outcome is the number of violent anti-immigrant incidents per county per month per 100,000 inhabitants. The treatment is the change in the number of asylum seekers per capita between 2014 and 2016. The base period is December 2014. Standard errors are clustered at the county level.

Table C.3: SOEP Results with County fixed effects

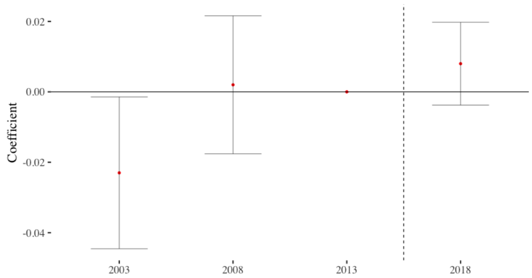
	Full sample	Low empl.	High empl.	Low AFD	High AFD
	(1)	(2)	(3)	(4)	(5)
Trust	.006	.001	.015*	.0009	.013
	(.007)	(.007)	(.008)	(.007)	(.009)
People are helpful	.000	-.011	-.005	-.005	-.016
	(.007)	(.008)	(.012)	(.009)	(.01)
People are fair	-.003	-.011	.026***	.002	.007
	(.007)	(.008)	(.009)	(.011)	(.009)
Caution towards foreigners	.005	.01	-.003	-.008	.019**
	(.006)	(.008)	(.01)	(.007)	(.007)
Worry about crime	.005	.019*	-.001	.002	.018*
	(.006)	(.01)	(.005)	(.005)	(.009)
Donation	.000	-.02**	-.011	-.006	-.029**
	(.006)	(.01)	(.012)	(.009)	(.011)
County FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes	Yes

Notes: This table shows the difference-in-difference estimates for the SOEP data. All regressions include county, individual and year fixed effects. *Significance levels:* * = 0.1; **= 0.05; ***= 0.01.

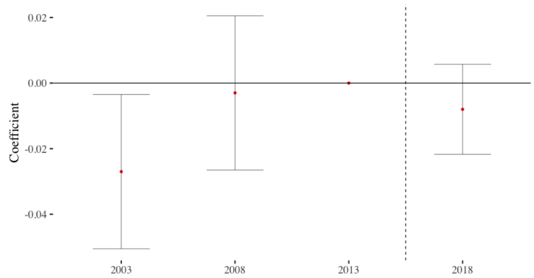
D Additional Results

D.1 Pre-trends in the SOEP

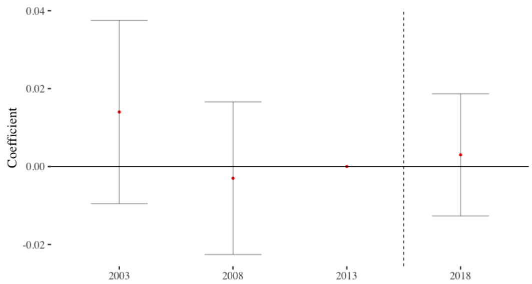
In Figures D.8 and D.9, we show the pre-trends for the individual-level analysis for the percentage increase in the number of asylum seekers and the assignment per 1,000 inhabitants, respectively.. We cannot show pre-trends for donations because this variable was only included in 2013. Each panel shows the point estimates and 95% confidence intervals from a semi-parametric difference in difference model that includes interactions of the county-level inflow of asylum seekers with year dummies, whereby 2013 or 2014 serve as the benchmark period. All regressions include individual-level fixed effect regressions. The pre-trends can be inferred from the coefficients before the benchmark period. In both figures, the pre-trends look unsystematic and noisy. In some figures, the coefficients 2003 are statistically significant, but the coefficients for 2008 — the last survey round before the base year 2013, are not. Our view of these pre-trends and the post-inflow estimates is that there appears to be no systematic relationship between the inflow and any of the outcomes.



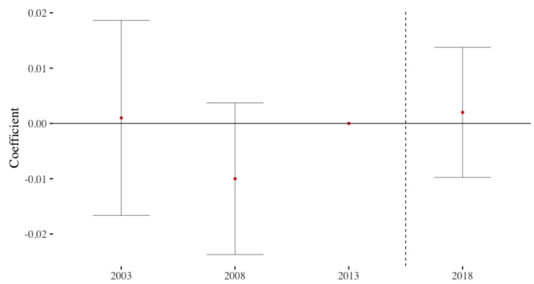
(a) Trust



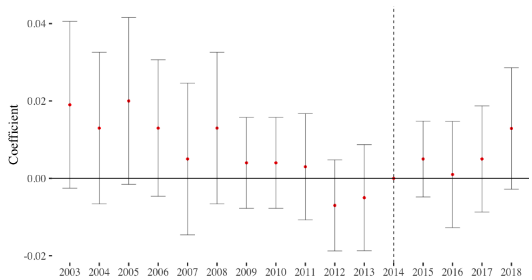
(b) People are Helpful



(c) Fairness



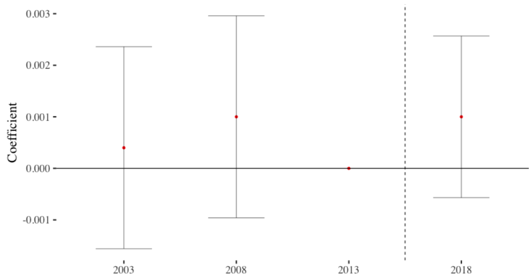
(d) Caution towards Foreigners



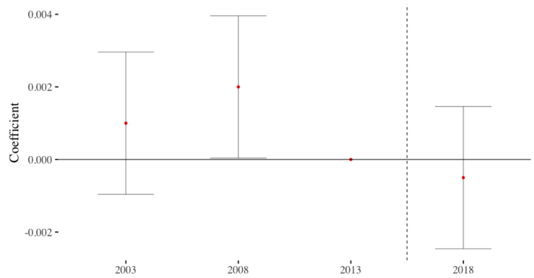
(e) Worry about Crime

Figure D.8: Pre-trends in the SOEP, Data from AZR

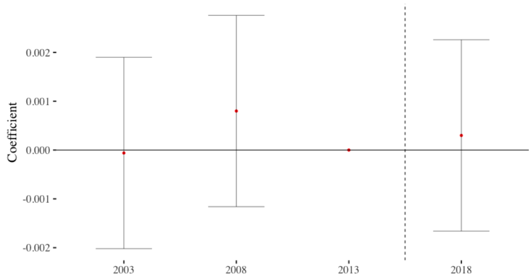
Notes: These graphs display the coefficients and 95% confidence intervals from semi-parametric difference-in-difference regressions. The relative increase in the number of asylum seekers between 2014 and 2016 is interacted with year dummies. The last available year before the inflow (2013 or 2014) serves as the benchmark period. All regressions include individual-level fixed effects and year dummies. The standard errors are clustered at the county level.



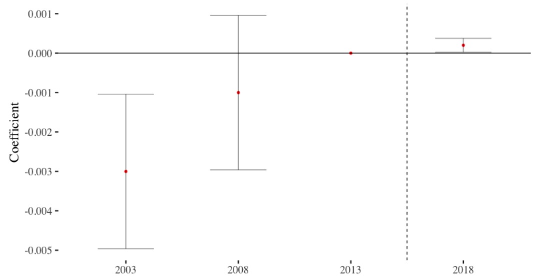
(a) Trust



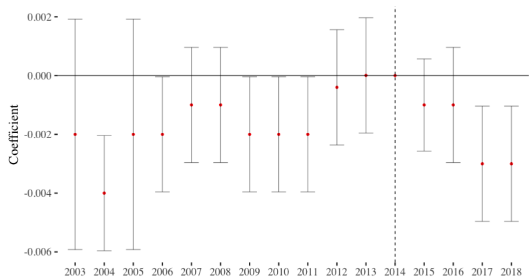
(b) People are Helpful



(c) Fairness



(d) Caution towards Foreigners



(e) Worry about Crime

Figure D.9: Pre-trends in the SOEP, Data on Assignment of Asylum Seekers per 1,000 Inhabitants

Notes: These graphs display the coefficients and 95% confidence intervals from semi-parametric difference-in-difference regressions. The assignment of asylum seekers per 1,000 inhabitants is interacted with year dummies. The last available year before the inflow (2013 or 2014) serves as the benchmark period. All regressions include individual-level fixed effects and year dummies. The standard errors are clustered at the county level.

D.2 Results Based on Data on the Assignment of Refugees

To assess the robustness of our results to the measurement of the local inflow, we use an alternative dataset from Gehrsitz and Ungerer (2022). This dataset includes the number of asylum seekers per 1,000 inhabitants that were assigned to a county between January 2014 and December 2015. Figure D.10 displays the estimates for the individual-level data from the SOEP, and Table D.4 the difference-in-differences estimates for anti-immigrant violence. The estimates for the SOEP are very similar to the estimates based on the percentage change in the number of asylum seekers from the main text. In Table D.4, the coefficient of 0.006 means that an increase in the number of assigned asylum seekers per 1,000 inhabitants by one standard deviation (around 5) leads to 0.03 additional events per month per county. This may not sound like a large effect, but it means that in every third county there will be one additional event per year. In contrast, the estimates based on the benefit recipient data are negative and statistically insignificant.

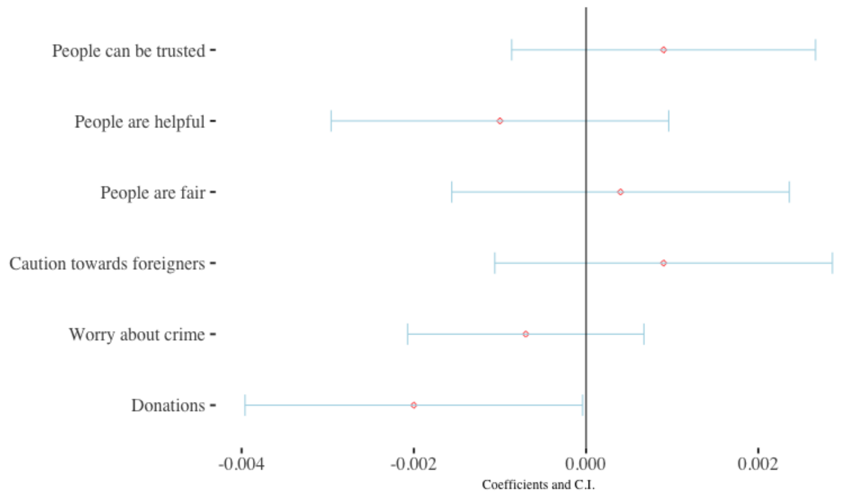


Figure D.10: SOEP: Fixed effect estimates, data on assignment of asylum seekers

Notes: This graph displays the point estimates and 95% confidence intervals for the difference-in-difference effect β in Equation 2 in the paper. Each outcome is a binary indicator that equals unity if a respondent agrees to a given statement. Each estimate is the result of a separate regression of the indicators listed on the left on the interaction of the number of assigned asylum seekers per 1,000 inhabitants in a respondent's county of residence in 2013 and an indicator for the post-2014 period. Standard errors are clustered at the county level.

Table D.4: DiD results: Anti-Immigrant Violence, Assignment Data from Ministries

	(1)	(2)	(3)	(4)
Treatment x Post	0.006***	0.006***	0.006***	0.006
	(0.002)	(0.002)	(0.002)	(0.004)
County FE		Yes	Yes	Yes
Date FE			Yes	Yes
County time trends				Yes
Observations	19,200	19,200	19,200	19,200
Adjusted R^2	0.025	0.126	0.225	0.227

Notes: This table shows the difference-in-difference estimates of the effect of the asylum seeker inflow on anti-immigrant violence. The regressor is an interaction of the number of assigned asylum seekers per 1,000 inhabitants between January 2014 and December 2015, interacted with a dummy that equals one in years after 2014. The data on the assignment are from Gehrsitz and Ungerer (2022). *Significance levels:* * = 0.1; **= 0.05; ***= 0.01.

D.3 Further Robustness Checks

In Table D.5, we coded three outcomes differently, namely outcomes for which answers are measured on a Likert scale. We coded the variables *People can be trusted* and *Caution towards foreigners* as one if the answer is *slightly agree* or *agree* and zero otherwise. Moreover, we coded the variable *Worry about crime* as one if a person answered with *somewhat concerned* or *very concerned*.

Table D.5: SOEP: Effects with Differently Coded Outcomes

	(1)	(2)	(3)
Trust	.002	.001	-.001
	(.003)	(.003)	(.003)
Caution towards foreigners	.004	.006	.018
	(.009)	(.009)	(.010)
Worry about crime	-.0004	.001*	-.001*
	(.004)	(.004)	(.003)
County FE		Yes	Yes
Year FE			Yes
Individual FE			Yes

Notes: This table shows the effects of the inflow on outcomes that are coded differently compared to the variables used in the main estimation. We coded the variables *People can be trusted* and *Caution towards foreigners* as one if the answer is *slightly agree* or *agree* and zero otherwise. Moreover, we coded the variable *Worry about crime* as one if a person answered with *somewhat concerned* or *very concerned*. The regressor of interest is an interaction between the increase in the number of asylum seekers and a dummy for years post-2014. Standard errors are clustered at the county level. *Significance levels:* * = 0.1; **= 0.05; ***= 0.01.

One concern might be that the missing eight counties affect the results. To assess the magnitude of a potential bias, we perform a bounding exercise based on the data on anti-immigrant violence, whereby we estimate specifications in which we replace the missing relative increases in the number of asylum seekers with different values (minimum, 25th percentile, median, 75th percentile, maximum). The results are shown in Table D.6 below. Column (1) displays the main results for comparison. The bounds shown in Columns (2) and (5) assume extreme values for the missings. When we impute the missing values with the minimum increase in the number of asylum seekers (Column 2), the results are almost unchanged. The same holds true when we replace the missing values with values at the 25th, 50th, and 75th percentile, respectively. The only exception is in Column (5), where we replace the missing values with the largest increase in the number of asylum seekers in the sample — which is a clear outlier. In that case the estimate is considerably smaller. Nonetheless, the results for more reasonable imputations are stable, which gives us confidence that the missing observations do not systematically drive the results. We also performed a similar analysis for the SOEP. As it turned out, most missing counties were not represented in the SOEP, which means that the results of the bounding exercise were virtually the same regardless of the imputation.

Table D.6: Bounding Analysis, Anti-immigrant Violence

	Missing	Min	P25	Median	P75	Max
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment x Post	0.054***	0.049***	0.054***	0.054***	0.054***	0.017*
	(0.019)	(0.018)	(0.019)	(0.019)	(0.019)	(0.010)
Observations	18,864	19,296	19,296	19,296	19,296	19,296
Adjusted R^2	0.029	0.028	0.028	0.028	0.028	0.024

Notes: This table shows the difference-in-difference estimates of the effect of the asylum seeker inflow on anti-immigrant violence. The regressor is the percentage increase in the number of asylum seekers from 2014-16 relative to 2014, interacted with a dummy that equals one in years after 2014. Column (1) reproduces Column (4) from Table 1. The estimates in this column are based on a sample of 393 counties, which means that eight counties are missing. In the remaining columns, we replace the inflow for the missing counties with the inflow at the minimum, 25th percentile, median, 75th percentile, and maximum of the observed distribution of inflows of asylum seekers, respectively. *Significance levels:* * = 0.1; **= 0.05; ***= 0.01.