ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Gehrsitz, Markus; Ungerer, Martin

Working Paper

Jobs, crime, and votes: A short-run evaluation of the refugee crisis in Germany

ZEW Discussion Papers, No. 16-086

Provided in Cooperation with:
ZEW - Leibniz Centre for European Economic Research

Suggested Citation: Gehrsitz, Markus; Ungerer, Martin (2018) : Jobs, crime, and votes: A short-run evaluation of the refugee crisis in Germany, ZEW Discussion Papers, No. 16-086, Zentrum für Europäische Wirtschaftsforschung (ZEW), Mannheim

This Version is available at:
https://hdl.handle.net/10419/180385

Standard-Nutzungsbedingungen:

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

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

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

Terms of use:

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

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

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

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

Discussion Paper No. 16-086

Jobs, Crime, and Votes – A Short-run Evaluation of the Refugee Crisis in Germany

Markus Gehrsitz and Martin Ungerer

ZEW

Zentrum für Europäische Wirtschaftsforschung GmbH

Centre for European Economic Research

Discussion Paper No. 16-086

Jobs, Crime, and Votes – A Short-run Evaluation of the Refugee Crisis in Germany

Markus Gehrsitz and Martin Ungerer

Download this ZEW Discussion Paper from our ftp server:

http://ftp.zew.de/pub/zew-docs/dp/dp16086.pdf

Die Discussion Papers dienen einer möglichst schnellen Verbreitung von neueren Forschungsarbeiten des ZEW. Die Beiträge liegen in alleiniger Verantwortung der Autoren und stellen nicht notwendigerweise die Meinung des ZEW dar.

Discussion Papers are intended to make results of ZEW research promptly available to other economists in order to encourage discussion and suggestions for revisions. The authors are solely responsible for the contents which do not necessarily represent the opinion of the ZEW.

Jobs, Crime, and Votes - A Short-run Evaluation of the Refugee Crisis in Germany

Markus Gehrsitz*

Martin Ungerer†

June 20, 2018

Abstract

Millions of refugees made their way to Europe between 2014 and 2015, with over one million arriving in Germany alone. Yet, little is known about the impact of this inflow on labor markets, crime, and voting behavior. This article uses administrative data on refugee allocation and provides an evaluation of the short-run consequences of the refugee inflow. Our identification strategy exploits that a scramble for accommodation determined the assignment of refugees to German counties resulting in exogeneous variations in the number of refugees per county within and across states. Our estimates suggest that migrants have not displaced native workers but have themselves struggled to find gainful employment. We find moderate increases in crime and our analysis further indicates that while at the macro level increased migration was accompanied by increased support for anti-immigrant parties, exposure to refugees at the micro-level had the opposite effect.

Keywords: Immigration, Refugees, Unemployment, Crime, Voting
JEL codes: J6, J15, K4, D72

*University of Strathclyde, Department of Economics, e-mail: markus.gehrsitz@strath.ac.uk. Corresponding address: Duncan Wing, 199 Cathedral Street, Glasgow, G4 0QU, UK.

†University of Cologne and ZEW, e-mail: ungerer@zew.de. Corresponding address: Center for European Economic Research, L7 1, 68161 Mannheim, Germany.

We are grateful to Martin Berghausen, Marco Caliendo, Paul Hufe, David A. Jaeger, Andreas Peichl, Andrea Weber, and the participants of the ZEW Workshop on Assimilation and Integration of Immigrants, and the participants of the 2017 ESPE and EALE annual meetings for many valuable comments and suggestions. We would like to thank the responsible state authorities for providing administrative records on refugee allocations.

1 Introduction

Immigration has become one of the more contentious issues in the public discourse on policies related to labor markets, crime, trade, and the political economy. The debate has intensified in light of the recent inflow of refugees to Europe. The main goal of this paper is to use this sharp and unexpected rise in the number of migrants coming to Germany in 2014/2015 as a natural experiment in order to evaluate its short-run effect on unemployment, crime, and voting behavior. In this, we build on numerous studies that have investigated the impact of migration and immigration, often with a focus on labor market outcomes. Arguably, a consensus has not been reached. For example, Card (2001) and Dustmann et al. (2013) find very small or insignificant effects of immigrant inflows on natives wages and employment prospects. Borjas (2003) and Aydemir and Borjas (2007), on the other hand, show substantial negative effects of immigration on natives' labor market outcomes. These conflicting findings can be explained by differences in the model assumptions, in particular the degree to which natives and immigrants are substitutes (Borjas et al., 2012; Card, 2012). Moreover, the frequently applied spatial correlations approach, which divides data into cells based on geography and skill levels, is prone to endogeneity issues not least because immigrants are likely to differentially sort into regions that offer them the best employment prospects. As a result, a range of natural experiments such as the Mariel boatlift (Card, 1990; Borjas, 2015) the relocation of Algerian repatriats to France (Hunt, 1992), spatial dispersal policies (Edin et al., 2003; Gould et al., 2004; Damm, 2009), or border openings after the fall of the Berlin wall (Dustmann et al., 2016) have been exploited to get a better sense of the effect of immigration on labor market outcomes.

In the context of the effect of immigration on crime, there has been slightly less research, studies by Butcher and Piehl (1998) for the US, Bell et al. (2013) for the UK, and Bianchi et al. (2012) for Italy being notable exceptions. These studies have found no effects of immigration on violent crime and, at best, moderate effects on property crimes. However, Piopiunik and Ruhose (2017) find a positive association between crime and immigration in their longitudinal analysis of Germany, the country we study in this article. Finally, voting behavior and attitudes towards immigrants are an interesting re-

search frontier (Dustmann and Preston, 2007, among others). Mayda (2006) shows that individual skills are strong predictors of attitudes towards immigration. Card (2012) develops his concept of compositional amenities and shows that concerns about the social effects of immigration often outweigh concerns about its economic effects. Steinmayr (2016) uses an approach similar to ours in his study of migrant inflows to Austria and documents a negative relationship between the number of migrants and the support for right-wing parties.

Our study serves two purposes. First, we contribute to the literature by exploiting a natural experiment that was created by the allocation mechanisms in Germany during the refugee crisis in 2014/2015. We show that within states, migrants were allocated to counties based on reasons unrelated to local labor market conditions or crime levels. In particular, we provide evidence that neither incomes nor the demographic composition differ substantially between high and low migration counties. Housing vacancies are also not significant determinants of refugee allocations, although it remains conceivable that the availability of estates that can house a large number of refugees all in one place, e.g. abandoned barracks, is a predictor. More importantly, counties that experience small refugee inflows and those with large inflows appear to follow identical time trends in terms of unemployment, crime, and voting patterns. This allows us to obtain credibly causal effects on less stringent identification assumptions.

Second, our study provides a first evaluation of the short-run consequences of the refugee crisis in Germany, an event that features prominently in the public discourse. Using a difference-in-differences framework with continuous treatment, we find no evidence for displacement of native workers by refugees. However, our findings suggest difficulties in integrating refugees into the German labor markets. These difficulties are likely to worsen as more and more migrants become eligible to legally enter the labor market. Our findings are consistent with earlier studies for Germany, such as Pischke and Velling (1997) and D'Amuri et al. (2010), and stand in contrast with Glitz's (2012) study who exploits the exogenous inflow of ethnic Germans from the Soviet Union. His research design is probably the most similar to ours, although substantial differences remain, not least because the inflows in the 1990s were smaller on a per-year basis, migrants' skill and demographic profiles were different, and the time horizon Glitz (2012) was able to eval-

uate was longer. Our study also suggests that - with the obvious exception of violations to right-of-residence and asylum laws - there is little evidence of a crime epidemic. With that being said, we do find a positive and statistically significant relationship between migrant inflows and crime rates; in particular counties with bigger reception centers have seen increases in drug offenses and violent crime, as well as the number of non-German suspects in relation with these crimes, although this finding might partly be driven by higher alertness of police in these counties. Finally, the obvious relationship between the support for anti-immigrant parties and increased refugee numbers is not necessarily reflected at the micro level. In fact, a local-level analysis of election records of municipalities in North Rhine-Westphalia suggests that relatively higher refugee inflows might depress support for the main anti-immigrant party.

The remainder of this paper is structured as follows. In the next section, we provide background information on the refugee crisis and how the German institutional setting dealt with the inflow of hundreds of thousands of refugee migrants in 2014 and 2015. Section 3 introduces our data, in particular the newly collected administrative records that document the distribution of refugees across counties. Section 4 describes the empirical setup and the assumptions our identification strategy is built on. We present our results in Section 5, discuss them in Section 6 where we also provide additional robustness checks and conclude in Section 7.

2 Background

2.1 Synopsis of the Refugee Crisis

In 2011, the year the Syrian civil war erupted, only 50,000 asylum applications were filed in Germany (BAMF, 2016). From 2014 on, more and more people embarked on their journey towards Europe. Most of them took the so-called "Eastern Mediterranean Route", crossing the Mediterranean, often on make-shift boats, from Turkey into Greece. From there they traveled onwards through countries of former Yugoslavia towards Western Europe. In theory, asylum applications in the European Union (EU) are governed by the Dublin Regulation which shifts the responsibility of administering an

asylum request to the first EU member state a migrant sets foot on. In practice, few refugees had any intention of staying in Greece (or Hungary), but tried to travel on to, among other countries, Austria, Germany, or Sweden, as these countries promised better living conditions, more generous welfare benefits and better job perspectives. By late summer 2015, amid images of refugees being stuck in trains and camps in Hungary, the German government in essence abandoned the Dublin Regulation and allowed all refugees who had passed through other EU countries to file for asylum in Germany.

At this point, the inflow changed from a steady increase to a large jump in daily arrival rates, with thousands of new refugees seeking asylum at the German border every day. Figure 1 attests to this immigration shock. In 2015 alone 1,091,894 refugees were registered at the German border (BMI, 2016). The inflows were only curtailed in early 2016 when, among other things, a deal was forged between the EU and Turkey, in which Turkey committed to crack down on people smugglers in return for €6 billion in aid earmarked for humanitarian support of refugees who have fled to Turkey. The deal effectively closed the Eastern Mediterranean Route. For example, Figure 1 shows that in April 2016 only 15,941 refugees were registered in Germany.

The aforementioned number of 1,091,894 refugees coming to Germany in 2015 insinuates that at the federal level exact data on the number of arrivals exist. Unfortunately this is only partly true. While every refugee who is picked up by the German border police undergoes a quick check, the actual registration takes place in separate reception centers. Between quick check and registration, numerous ways to unilaterally exit the asylum procedure exist. For example, little is known about the number of refugees who continued their journeys to other countries and left with asylum claims pending. To the best of our knowledge, we are the first to collect detailed data on the allocation of registered asylum seekers to German counties, by obtaining administrative data of the states and counties. Our data unfortunately include no information on refugee characteristics. To this end, the best information to date come from the Federal Office for Migration and Refugee's asylum (BAMF) statistics. However, these data are based only on asylum claims that have been fully processed. For example, in 2015 when about 1.1 million migrants entered the country, only 476,649 asylum applications were processed which included backlog from 2014 (BAMF, 2016). Based on this information about 69.2

percent of applicants were male, about 31 percent were younger than 18 years old and only 6.6 percent were older than 45. About 35.9 percent of asylum seekers were from Syria. About 20 percent were from Albania and Kosovo and only about 0.1 percent of applications from citizens of these two countries were approved. In fact, both countries were officially declared "safe countries of origin" in 2015, thus substantially speeding up asylum procedures and reducing the inflow from these countries. For example, Albania only accounted for 2 percent of processed asylum applications in April 2016.

The German authorities had a top-to-bottom system in place to deal with refugee inflows. Newly arrived refugees were supposed to be received by the federal police at their points of entry, often at train stations close to the Austrian border.[1] After a quick check by the federal police, most refugees were placed in short-term facilities for a couple of days, before being transferred to a federal state with free capacities.[2] These allocations were to follow a quota, the so called "Koenigssteiner Schluessel". This quota is determined by a state's tax revenues and population, thus ensuring that the costs related to housing and processing asylum claims are evenly distributed. Each state runs reception centers (so called "Erstaufnahmeeinrichtungen", EAEs). EAEs tend to have large-scale housing facilities. Only there, more detailed information is gathered from the prospective asylum claimants and entered into the EASY System. Applicants are obliged to stay in their assigned reception center for a period of up to six months during the processing of their application. Violations of these residential obligations lower the chances of being granted asylum. After this period, or - more often - if the BAMF decides that the application cannot be processed in a timely manner, asylum seekers are redistributed within the same state to subordinate counties ("Landkreise").[3] Due to efficiency gains and a lack of available space, county authorities tend to provide communal accommodations

[1]Even in this first step, not all refugees could be processed, the BAMF estimates that up to 290,000 persons have not been registered at all.

[2]The standard procedure provides that new arrivals are transferred to the closest reception center, where their personal information is entered into EASY, a federal database. The EASY system subsequently allocates new arrivals to one of Germany's 16 states for further processing of their asylum claims.

[3]Each state has the authority to distribute asylum seekers to subordinate counties according to its own legislation ("Rechtsverordnungen"). Usually asylum seekers were supposed to be allocated to counties commensurate with their population. But all states include a clause in their legislation that allows for deviations under extraordinary circumstances. Section 3 will show that invoking theses clauses and deviating from the scheduled distribution schemes quickly became the norm rather than the exception.

rather than allowing asylum seekers to seek individual apartments.

2.2 Refugee Inflows and Identification

An ideal natural experiment would feature an entirely random allocation of refugees to counties, with some counties receiving large inflows and other counties receiving small inflows regardless of their characteristics. The actual quasi-experiment provided by the refugee crisis at the very least resembles this ideal case and creates exogenous variation due to housing shortages and the sheer necessity to relocate refugees from the German border: refugees were usually transported from border regions in Bavaria to other states by trains and buses on a daily basis. Deviations of the actual distribution quotas - both the state-quotas and within-state quotas - were inevitable and mainly arose from housing capacity shortages and inseparable groups. Due to the overwhelming volume of inflows, state authorities usually simply allocated migrants to counties that had some kind of accommodation facilities to spare, for example because they happened to be home to recently abandoned military barracks, or sports halls that could be transformed into collective accommodations, or recently closed hotels, etc.. The availability of suitable housing might not be entirely independently distributed across counties but as we will show in Section 4, the resulting inflows were by and large uncorrelated with economic and social county characteristics. Moreover, allocation decisions were made by state authorities, and within states counties are subject to very similar crime fighting strategies (policing is primarily the responsibility of the states) and reasonably similar labor market conditions.

Several pull and push factors incentivize asylum seekers to stay in their designated county. For one, asylum seekers are provided with goods and social services at their accommodations or nearby reception centers. Second, refugees are legally obliged to reside in their assigned accommodations until a decision has been made on their asylum claim. Violations against this "residence obligation" negatively affect the probability of having one's asylum claim approved. The average processing time for asylum applications is about half a year and is highly dependent on an asylum seeker's country of origin and the

types of documents he/she can provide.[4] However, an asylum procedure is not usually initiated immediately upon arrival. Instead, an initial interview appointment has to be scheduled which usually involves waiting times of several months. In other words, asylum seekers are tied to a county for substantial time. In the meantime, they are legally prohibited from working, and only once an application is fully approved can they freely enter the labor market. Ultimately, the scramble to somehow place refugees in what was often make-shift housing resulted in large differences in the number of refugees hosted by counties that in other dimensions followed strikingly similar time trends. It is exactly this source of exogenous variation we exploit in this study.

3 Data

For our analysis, we combine several data sources, the most important of which are administrative records by the 16 German states on the allocation of refugees to 402 subordinate counties. These records are usually maintained by the states' internal affairs ministries, or in some instances by a state-run agency that supervises the allocation of refugees to the counties. While the German freedom of information act ("Informationsfreiheitsgesetz") only applies to federal agencies, most states have similar laws in place and the competent authorities in all 16 states provided records on the assignment of refugees to counties in the years 2014 and 2015. By and large, all states abided to the same reporting standards, making those data comparable across states.[5]

The term "refugee" is often used to describe a person who had to leave his or her home countries due to persecution, discrimination, war, or other imminent reasons, and is

[4]According to the federal police only about 20-30 percent of refugees entering the country were in possession of a passport (GdP, 2015). In general, Syrian asylum seekers, whose applications have a high probability of being approved, and asylum seekers from the Balkans, whose application have little chance of being approved, are processed with priority.

[5]For Bavaria, we only received cumulative data on a yearly basis for 2014 and 2015. Thereby, we were able to extract the exact number of assigned refugees in 2015. For 2014, however, we made the assumption that allocation in the previous years had been conducted according to the official scheme and subtracted these from the cumulative numbers. On the one hand, an even distribution prior to 2014 seems reasonable given the significantly smaller refugee numbers. On the other hand, we made sure our findings are not sensitive to these assumptions and ran our analysis only using 2015 data and excluding Bavaria. Neither changed the direction of results.

now seeking for shelter in a save country. In the German legal context, all those who seek shelter in Germany need to apply for asylum and have to be granted the legal status of "recognized refugee" or "under subsidiary protection". Once refugees have entered Germany and have been registered in the system, they become asylum seekers even though they might have to wait until they can file a request for asylum and hope for a positive decision. The data we collected is on the group of individuals who either are registered, are waiting to file an asylum claim, or are waiting for a decision. Asylum seekers may well affect crime rates and voting behavior of natives, but they are not legally allowed to work until their asylum claim is positively decided. Acceptance rates vary greatly between nationalities. Hence, only a part of the initial asylum seekers will be able to affect labor market statistics.

While our main analysis is based on the aforementioned administrative data, we complement it with data on registered migrants from the federal registry of foreigners (Ausländerzentralregister, AZR). The AZR carries information on the number of foreigners by country of origin and legal status such that we are able to assess the number of positively decided asylum decisions for selected nationalities. However, the AZR potentially suffers from measurement error and time lags when legal statuses changes. Therefore, we treat results based on these data with some caution and primarily regard them as robustness checks.

Aside from coordinating the transfer of asylum seekers to counties and communities, states also run the above mentioned large-scale reception centers (EAEs). We obtained detailed information on the location and capacities of these EAEs directly from the competent authorities of 8 states. 4 other states pointed us to their website where the same information could be retrieved. For the three city states - Berlin, Hamburg und Bremen - which are equally state and county, there is no clear distinction between state-run EAEs and county-level accommodations.

Table 1 shows the number of migrants that were allocated to the counties by the states according to our data in 2014-15. It is notable that these numbers are more or less in line with the shares of refugees that were supposed to be received by states by virtue of the federal quota. For example, Germany's most populous state, North Rhine-Westphalia (NRW) was due to receive 21.21 percent of refugees entering the country,

according to the federal key. In our data about 24.4 percent of refugees were allocated to NRW counties. Note that the allocated percentage does not necessarily have to be identical to the federal quota since some of the federally allocated asylum seekers might be housed in state-run EAEs rather than allocated to the counties. This is especially true for Bavaria, through which most refugees who took the Balkan route entered the country; similarly, Baden-Wuertemberg and Hesse have large (state-administered) EAE capacities and correspondingly somewhat lower county allocations.

As mentioned in Section 2, federal data on the number of registered asylum seekers are scarce and often incomplete.[6] In light of this, our data is arguably the best estimate of county-allocations of refugees to date and probably draws a more accurate picture of refugee allocations than the federal data base could. Despite the issues with federal data in general and the EASY system in particular, it is comforting that the data provided by the states are roughly consistent with the federal allocation key.

Based on the administrative records provided by the states, we calculate the number of allocated asylum seekers per 100,000 inhabitants for each county. Figure 2 illustrates that there is quite a bit of variation across counties, even within states. Crosses indicate the presence of an EAE in a county. In some instances, counties in which a particularly large state-run EAE has been set up were allocated fewer migrants. Other than that there is no obvious, discernible pattern in the allocation of refugees within states, although some states certainly achieve a more even allocation across counties than others. Yet, a fair amount of variation remains (the average refugee allocation is 1,103 per 100,000 inhabitants with a standard deviation of 494). This is vital for our study which exploits county differences in refugee allocations to isolate the effect of additional asylum seeker inflows on labor market, crime, and election outcomes.

Unemployment data are provided by the Federal Labor Office on a quarterly basis from Q1/2005 to Q4/2016. Figure 3 plots the unemployment rates separately for the general population and for non-German workers. Three things stand out. First, unemployment rates for non-Germans are substantially higher than for the "native" population. The non-German unemployment rate also warrants a closer look as newly arrived

[6]The EASY system has also been widely criticized for containing duplicates and refugees that continued their journey to other countries.

job seekers might be better substitutes for existing foreign workers, thus exacerbating an existing lack of integration into the labor market for this particular group. And indeed, there is a notable increase in non-German unemployment in the first quarter of 2016. However, at first glance, this increase seems only slightly more pronounced in counties with high refugee inflows than in those with low inflows. Second, no such up-tick is obvious for overall unemployment. This is a first indication that overall unemployment has not been much affected by refugee inflows. Figure 4b supports this notion by plotting changes in unemployment rates between the first quarter of 2013 and the first quarter of 2016 for all counties. A comparison with Figure 4a, indicates that changes in unemployment are for the most part uncorrelated with migrant inflows. The Federal Labor Office also provided county-level aggregates on median wages and employment numbers which are used for robustness checks.

We also obtained data on criminal activity and criminal suspects. These data are released by the Federal Criminal Police Office on an annual basis. Figure 5a plots trends in reported crimes separately for high and low migration counties. It should be noted that not all cases are solved and that minor infractions and petty crimes are not recorded. The graph reveals a large increase in the number of criminal offenses per 100,000 inhabitants in 2014 and 2015 when the refugee crisis was in full swing. At first blush, this might suggest that the refugee crisis was accompanied by a crime epidemic. However, much of this increase can be explained by an increase in violations related to asylum and right-of-residence laws. By definition, any refugee who enters Germany on the land route will be in violation of the Dublin Regulation, although in practice few of these violations were actually recorded. What is more, asylum seekers whose applications were rejected and who remain in the country illegally will inflate these numbers. Once we adjust the time series by discarding these types of offenses, the up-tick in crime disappears, in fact the crime rate seems to have not budged at all.[7]

The refugee crisis has also had profound impacts on the political landscape in Germany. Therefore, we collected data on election outcomes for the federal vote in 2013 and

[7]It should be noted that we could only adjust the time series for 2014-2016 since transgressions of asylum and right-of-residence laws were not reported on a per-county-basis prior to 2014. However, in 2013 these offenses only accounted for 1.85 percent of all offenses nationwide, so that the amount of (downward) bias that is induced by this adjustment should be negligible.

2017, and vote polls, with a particular focus on anti-immigrant parties. Interestingly, a new such party formed in 2013, the "Alternative fuer Deutschland" (AfD). At the time, its main platform was opposition to the Euro and the Euro zone bailouts. Figure 6 shows bi-weekly AfD party polls. The first vertical line indicates the 2013 federal election in which the AfD party received 4.7 percent of votes, thus failing to clear the constitutional 5 percent threshold to receive any seats in the federal parliament. Over time, the AfD party's focus turned from Euro-scepticism towards immigration. The second dashed vertical line is placed at 5 September 2015. On this day the German chancellery allowed the entry, by train, of hundreds of refugees who had been detained and were stuck in Hungary. This event is widely seen as the beginning of the refugee crisis with migrant inflows intensifying in the following weeks and months. It also seems to have been associated with an increase in approval for the AfD party which ever since has consolidated its position. In the 2017 election, it captured about 13% of seats in the federal parliament. We evaluate whether the electoral success of the AfD party has increased differentially in counties that experienced large asylum seeker inflows relative to the party's performance in the 2013 federal election. As the AfD party had not been an anti-immigration party in 2013, we also group election outcomes for right-wing parties in general and run a separate analysis excluding AfD party vote shares in 2013 from the pool.[8] Moreover, we were able to obtain municipality-level data on assigned refugees and electoral outcomes for Germany's most popular state, North Rhine-Westphalia. We use these data to analyze exposure to refugees in a more narrow grid.

Finally, the Federal and States Statistical Offices' regional statistics database provides us with a variety of county characteristics. Each county's per capita GDP (in €), age structure, the share of the population that is male/female and German/non-German respectively, the share of the population receiving housing benefits were sampled.[9] We will use these characteristics to explore to what extent the allocation of refugees to counties constitutes an exogeneous shock. Table 2 indicates that high migration and low

[8]We group together NPD, Republicans, proDeutschland, DIERECHTE (and AfD party) in 2013 and AfD, NPD, DM, and DIERECHTE in 2017.

[9]Note that these characteristics are as of the end of each year. Hence, we use the values of the previous year in our regression, e.g. GDP per capita as of 31 December 2015 is in the same data row as our 2016 outcomes.

migration counties differ only marginally along observable dimensions. For example, the youth coefficient - the ratio of people under 20 years old relative to the number of people between 20 and 64 - is very similar across high migration and low migration counties. There is a small difference in per capita GDP which is slightly higher in counties that experienced large migrant inflows. This should not be surprising since the federal allocation quota arranges for larger contingents to be allocated to economically stronger states. We will see in Section 4 that once state specific characteristics are accounted for, these differences by and large disappear.

4 Methodology

All five data sources - administrative state records on refugee allocations and EAE capacities, unemployment rates as provided by the Federal Labor Office, the Federal Criminal Police Office's crime data, official federal election outcomes, and county covariates are subsequently matched with one another at the county level. For each outcome, we have at least one observation per county prior to the refugee crisis in 2013 and one observation pertaining to 2016 (or 2017 for election results). As the number of refugees assigned to a certain county potentially depends on the share of asylum seekers the county received before, we include data for the 2014 refugee distribution. That is, we pool the 2014 and 2015 figures, in order to create a comprehensive measure of refugee inflows.[10] We then estimate a first-differences model of the following form:

$$\triangle y_{ct} = \beta_0 + \beta_1 ref_c + \beta_2 EAE_c + \theta \triangle X_{ct} + \eta_{ct} \tag{1}$$

where y_{ct} is a measure of our three outcomes of interest - unemployment rates, crime rates, and election outcomes - in county c at time t. Our coefficients of interest are β_1 and β_2, which yield the effect of the number of refugees that were allocated to a county between 1 January 2014 and 31 December 2015, ref_c, and the EAE capacities, EAE_c, that were put into operation over the same time period. β_1 and β_2 thus measures to what

[10] As a robustness check, we also treated the 2015 and 2014 inflow separately and evaluate how changes in inflows between these two years are associated with changes in outcomes.

extent counties which experienced a larger influx of refugees have experienced larger increases in unemployment, crime, and votes cast for anti-immigrant parties.

Our empirical setup differs from a classic difference-in-differences setup in two ways. First, all units of observations receive the treatment (i.e. inflows of migrants) but the intensity of this treatment differs across counties.[11] Second, we only observe outcomes at two points in time. Once in the pre-treatment period and once in the post-treatment period respectively.[12] That is, unemployment rates are evaluated in the fourth quarter of 2013 and the fourth quarter of 2016; we evaluate changes in crime between 2013 and 2016; and changes in the AfD party vote share between the federal elections in September 2013 and September 2017 respectively. Note that with just two observations per county, equation 1 is equivalent to a standard difference-in-differences setup of the following form:

$$y_{ct} = \delta_c + \gamma D_{2016} + \beta_1 D_{2016} \times ref_c + \beta_2 D_{2016} \times EAE_c + \theta X_{ct} + \eta_{ct} \tag{2}$$

where δ_c denotes a full set of county dummies and D_{2016} is an indicator for the post-treatment period.

Our identification strategy, requires that refugee allocations are independent of any time trends in the residuals ("common time trend assumption"). In order to investigate whether this identifying assumption is met, we split our sample into high and low migration counties. High migration counties are defined as counties which host an EAE with a capacity of at least 200 beds or have been allocated more than 1,260 refugees per 100,000 inhabitants, which puts them roughly into the 25th percentile in terms of this measure. This achieves a 50:50 split into high and low migration counties.

Figure 3 shows that unemployment *levels* tend to be slightly higher in counties that receive a large migrant influx. But more importantly, there is no difference in unemployment *trends* in the pre-treatment period. Both low migration counties and high migration counties experience the same seasonality patterns and have experienced the same decline

[11] In terms of this feature, our study resembles, among others, the prominent work of Acemoglu et al. (2004) who investigate the effect of differential mobilization rates across US states during World War II on female labor supply.

[12] In this respect, the empirical setup of our study resembles Card and Krueger's (1994) seminal study on the effect of the minimum wage increase in New Jersey.

in unemployment throughout the 2000s and 2010s.

The number of committed crimes also follows very similar pre-crisis time trends in low and high migration counties. This also holds true when we look at different categories of crime. For example, the number of street crimes declined to the same extent during pre-treatment period in counties that were to experience large and small migrant inflows in 2014/2015 (see Figure 5b). Likewise, the number of drug-related offenses appears to have remained flat in both types of counties.

One major challenge to the validity of our estimates of the relationship between refugee inflows on the one hand, and unemployment, crime, and voting behavior changes on the other hand, is that high and low migration counties might differ along dimensions that predict differential refugee allocations. For example, if refugees were primarily allocated to counties in economic decline, our model would pick up spurious, positive correlation between unemployment and refugee inflows. In an ideal empirical setup, on the other hand, refugees would be randomly assigned to counties, thus creating differential exogenous shocks. The institutional setup in Germany provided for neither a negatively selective nor random assignment of refugees to counties. After all, allocation quotas require economically stronger states to absorb larger inflows. Nonetheless, Table 3 shows that after controlling for state fixed effects, only one of our observable county characteristics is an individually significant predictor of the number of refugees allocated to a county. Interestingly, the number of empty housing units (per 1,000) - a country characteristic that was pulled from the Zensus 2011 - is *not* a statistically or economically significant predictor of refugee inflows. Overall, within-state refugee inflows into a county are mostly uncorrelated with observable county characteristics. It should be stressed that our empirical setup does not even require this very strong assumption of random refugee inflows to hold. Equation 1 will yield an unbiased estimate of the differential effect of migrant inflows as long as the residuals in low migration and high migration counties are subject to the same time trends. Figures 3 and 5 support this common time trend assumption. Still, the fact that few of our observable characteristics are significant predictors of refugee inflows experienced by the counties lends additional support to this identifying assumption.

While housing vacancies are no significant predictors of refugee allocations, anec-

dotal evidence suggests that the presence of a single large property that allows for the accommodation of many refugees in one facility, e.g. former army ("Bundeswehr") barracks, might be a strong predictor of refugee inflows. Unfortunately, there seems to exist no conclusive list of abandoned barracks, so that we cannot entirely dismiss the notion that the presence of such a property leads to non-random allocations of refugees across counties.[13] Even if having hosted a military base in, say, the 1980s was associated with larger refugee inflows today, this would only threaten the validity of our estimates if barracks had been closed selectively and closures had differential effects on our outcomes of interest. In light of the fact that with the end of the cold war barracks all over the country became obsolete and were closed, such a narrative seems unlikely.

5 Results

5.1 Refugees and the Labor Market

Our regression analysis estimates the *differential* effect of refugee migrant inflows, i.e. whether counties with high migration inflow experience larger changes labor market outcomes, crime, and voter turnout. Our descriptive statistics in Table 2 suggest that this is hardly the case at least for labor market outcomes. In both low and high migration counties unemployment actually decreased slightly.

The results in Table 4 confirm this. The effect of additional refugees is only significant at the 10 percent level and economically small. A one standard deviation increase in distributed refugees (494) is associated with a 0.54 percentage point increase in overall unemployment, while the presence of a reception center does not play a significant role. As asylum seekers are only allowed to work after a positive asylum decision, the effect of increased refugee migration on labor market statistics is potentially skewed by heterogeneous acceptance rates and relocation activities. Hence, we also use data from the AZR in order to analyze the effect based on data about migrants by legal status as

[13]There is a surprisingly detailed list of several hundred abandoned Bundeswehr properties on Wikipedia. According to this list, virtually all West-German counties are home to a former army, navy, or air-force base. However, the Bundeswehr could not confirm the accuracy nor the completeness of said list. Nor is there any information on which facilities are suitable for accommodation.

a sensitivity analysis and find that our main results is robust to altering the database.[14]

For the unemployment rate of youths aged 15 to 25 (see columns (3) and (4) of Table 4) a differential effect of increased asylum seeker allocation is also not apparent. The vast majority of working-age migrants are between 16 and 25 years old and they will often look for apprenticeships or entry level positions which may put them into competition with young native workers (BAMF, 2016). Even so, our estimates suggest that there is little in the way of a displacement effect or increased unemployment in this labor market segment.

Another group of potential substitutes are non-German workers and pre-crisis immigrants, many of whom may possess similar skill sets. And indeed, larger inflows of refugees are associated with increases in the unemployment rate for workers who are not German citizens. Column (8) of Table 4 suggests that a one standard deviation increase in migrant inflows is associated with a 0.9 percentage point increase in the unemployment rate for non-Germans. Given the 2013 average unemployment rate which was 13.95% for this group, this estimate translates into about a 6.3 percent increase. There are two plausible explanations for this striking increase in non-German unemployment. For one, refugees may have displaced some non-German workers and pushed them into unemployment. This may very well have happened through the shadow economy as refugees can only legally enter the workforce once their asylum claim has been approved.[15]

A second explanation is that recently arrived refugees themselves start to show up in the unemployment statistics. Such a mechanical effect would indicate the struggle of the German labor market to immediately absorb this influx of additional job seekers. There is some evidence supporting this causal chain. On the county level, no information on the unemployment rate by country of origin is available; yet such information is compiled on the federal level. Figure 7 plots these data. On the left-hand side y-axis we measure the overall number of non-German job seekers. Between the third quarter of 2015 - which is also the time when substantial numbers of refugees should have started to receive work permits - and the end 2016 about 400,000 additional non-German job

[14]See Section 6 and Table A1.

[15]There is an alternative route for refugees to obtain a work permit. However, this route is subject to a complex approval process which among other things involves a priority check of whether there is no other job seeker from an EU country who is potentially being displaced.

seekers registered with the Federal Employment Agency. During the same time period the number of job seekers from the eight main crisis countries (Syria, Iraq, Afghanistan, Iran, Pakistan, Nigeria, Eritrea, and Somalia) increased by roughly the same number, indicating that the absolute increase in non-German unemployment is mostly driven by recent refugees seeking work. Note that the data underlying Figure 7 use a different definition of unemployment and include workers who are part of government-sponsored programs, e.g. to enhance their skills. The county-level data underlying Table 4, on the other hand, would not count job seekers who are taking part in active labor market policy programs as unemployed.

The simultaneous increase in non-German unemployment and unemployment of citizens from the main crisis countries is striking. It indicates that our regression estimate does not reflect displacement effects. Instead, our result might best be interpreted as evidence for difficulties of migrant workers to quickly integrate into the German labor market. These difficulties appear to be quite substantial. For example in all of 2015 only 137,136 people were granted asylum and thus received a work permit (2014 total was 31,025). In early 2016 processing speed picked up and 92,577 asylum claims were approved in the first three months of 2016 alone. The magnitude of the increase in unemployment indicates that many of those who have obtained a work permit by way of an approved asylum claim struggled to find employment. This problem appears to be particularly grave considering that not everybody who was granted asylum intends to become part of the labor force. For example, the BAMF estimates that about two thirds of Syrian women are neither in employment nor looking for work (Worbs and Bund, 2016). Similarly, many minors who were granted asylum are more likely to attend school than show up in the unemployment statistics. Hence, the labor marked increase in non-native unemployment which parallels the increase in the number of immigrants who were granted asylum (and thus became eligible to work) indicates substantial difficulties of the German labor market to absorb this labor supply shock, at least in the short-run. Not surprisingly these difficulties tend to be more pronounced in counties that received larger refugee inflows.

We can also benchmark our result against a scenario in which none of the recognized asylum seekers find employment. Aggregate figures from BAMF suggest that in

such an extreme scenario, the 548,679 positive asylum decisions in 2015 and 2016 would have increased the pool of the unemployed such that the average unemployment rate for non-Germans would have increased from 13.95 percent in 2013 to 18.22 percent in 2016.[16] The absolute unemployment numbers, in fact, suggest an increase to just 17.69 percent. This suggests that many recognized refugees are still looking for work. Considering that previous evidence on labor market integration of migrants and refugees shows that it can take up to 14 years for refugees to catch up with working migrants' labor force participation (Brücker et al., 2015), this is not too surprising.

Labor market integration does not only effect employment, but also has a potential effect on income. As a final analysis of the labor market effect of increased refugee migration, we analyze the development of median wages of full-time earners eligible to social security. This analysis is particularly useful as wages arguably show a more immediate response to an increase in labor supply, even if such an increase was concentrated in the informal sector. Table 5 suggests that there is no significant effect of increased refugee migration on median wages. Columns (3) and (4) suggest a small negative effect on median wages of young employees, aged 15-25. While statistically significant at the 10 percent level, this result is not economically significant. For instance, a one-standard deviation increase in the inflow of migrants would be associated with a drop in monthly wages of just €5.

Finally and interestingly, Table 4 indicates a negative relationship between the number of assigned asylum seekers and unemployed natives. A potential explanation is the increased public spending and short-term demand for services related to refugee housing and administration, such as security, care-taking, health and legal services, and logistics.

5.2 Refugees and Crime

Table 6 shows the effects of refugee inflows on crime rates. Panel A looks at the aggregate crime rate (per 100,000) and is adjusted for the natural increase in offenses related to immigration and asylum laws. Even after immigration offenses are excluded from the crime statistics, the number of refugees allocated to a county is significantly and

[16]This is obviously a hypothetical scenario that, among other things assumes, that the number of employed non-Germans who are not asylum seekers stays constant.

positively associated with increases in crime (see columns (1) and (2) of Panel A in Table 6). A one-standard deviation increase in migrant inflow is associated with about 95 additional crimes per 100,000. Given a mean of 6,417 crimes per 100,000, this translates into roughly a 1.5 percent increase.[17] Since 2013, the official crime statistics distinguish between German and non-German crime suspects. While refugees only make up a fraction of the non-German population, increases in the number of crime cases with non-German main suspects would support the hypothesis of immigration induced increases in crime. We indeed find a positive association between larger migrant inflows and the number of non-German suspects. Columns (5)'s and (6)'s coefficients suggest that a one standard deviation increase in refugee allocations increase the number of cases involving a non-German suspect by about 71 (mean is 625). This is a substantial increase and all results are robust to the inclusion of covariates.

We also evaluate violent crimes, property crimes, and drug offenses separately. The most important offenses subsumed into the official definition of "violent crime" are homicides, rape, robbery, and aggravated assault. Our results indicate a weak positive relationship between instances of violent crime and the number of allocated asylum seekers. However, the presence of a large EAE appears to be statistically significantly associated with an increase in violent crime. 200 extra beds per 100,000 inhabitants, which is roughly the average county capacity of an EAE, is associated with an increase of 1.76 cases of violent crime. Considering a 2013 county mean of 196.99, this translates into a 0.9 percent increase. Columns (5) and (6) of Panel B in Table 6 indicate that much of this appears to be driven by non-German suspects who saw about a 5.3 percent increase. It is not quite clear who the victims of this increase in violent crime are; county-level data on the nationalities of victims of violent crime is, unfortunately, not available. Aggregate national data suggests that it is very frequently non-Germans who are at the receiving end. The number of non-German victims has increased from 41,316 in 2013 to 66,541 in 2016, whereas the number of Germans who became a victim of a violent crime has slightly decreased over the same time period.

Official crime statistics, unfortunately, do not separate list a "property crime" cate-

[17]We also used a log-level specification as a sensitivity check, the results of which are consistent with our findings and are available from the authors upon request.

gory that includes all such crimes. Instead, county totals of "street crimes" are reported. These are all crimes that take place in the public sphere (e.g. public roads and spaces). The category is dominated by property crimes such as property damage and theft, especially theft from motor vehicles. However, this crime category also contains a few violent crimes, e.g. aggravated assault in public. Nonetheless, using the street crime aggregate should be a good proxy for property crime. Column (2) of Panel C in Table 6 indicates that a one standard deviation increase in migrant allocation is associated with an extra 17 street crime offenses (mean: 1,321) and we again find that the presence of an EAE is statistically significantly associated with an increase in non-German suspects. According to column (6) of Table 6's Panel C, an extra 200 beds is associated with about one extra non-native suspect.

The largest effects are visible for drug offenses. Here again, we provide suggestive evidence that EAEs are potential "hotspots" for crime. 200 additional EAE beds per 100,000 inhabitants are associated with an extra 5.9 to 7.6 drug offenses per county, roughly a 2.0 to 2.5 percent increase. Interestingly enough, our analysis of suspects in cases involving a drug offense suggests that the presence of a reception center is associated with statistically significant increases in both, the number of German and non-German suspects. An increase in 200 reception center beds increases the number of German suspects by about 4 (2013-mean: 219.81) and the number of non-German suspects by 1.2 (2013-mean: 43.35), where the latter effect is not very precisely estimated. Of course, we have no way of knowing how many of the non-German suspects are recent refugees.[18]

Overall, our results suggest that the presence of asylum seekers is associated with moderate increases in crime. For violent, property, and drug crimes we find that non-German suspects are often concentrated in counties that have large reception centers. It should be noted that our results are in line with previous findings in the literature. For example, in their study of immigration and crime in Germany, Piopiunik and Ruhose (2017) find that the in-migration of 100 additional (ethnic German) immigrants (per 100,000) was associated with a 0.9% increase in crime. Our results suggest that 100 additional asylum seekers are associated with about a 0.3% increase in total crime which

[18]In contrast to the unemployment data, publicly available federal crime statistics do not report the suspects' nationality.

is close to the effect that Bell et al. (2013) found for England.

Nonetheless, we cannot rule out that some of our results might be driven by authorities devoting more resources to policing areas with larger refugee presence. In other words, a plausible explanation for our findings could also be that the police specifically focused its activity on these areas which boosts crime reporting. In a sense, this would make the notion that crime is concentrated in reception centers a self-fulfilling prophecy. Either way, our analysis of official statistics and our relatively small standard errors all but rule out the presence of a "crime epidemic", especially for violent crime which is arguably the biggest concern.

5.3 Refugees and Voting Behavior

An analysis of voting behavior is complicated by the fact that elections do not take place very frequently. But fortunately, the federal elections in Germany were timed such that the refugee crisis fell right into the middle of the federal parliament's legislative period. That is, we have data on election outcomes in 2013 and 2017 and can thus analyze the differential effect of the number of assigned refugees on election outcomes.

Thereby, we put a focus on right-wing parties in general and the AfD party in particular, as it is the most prominent example of migration opposition in Germany. The AfD party was only founded in 2013 and national poll show a more or less flat development of the party's national approval ratings until the beginning of the refugee crisis. From thereon, there is compelling macro evidence suggesting a connection between increased refugee migration and support for the AfD party (see Figure 6).

However, the effect of direct (micro-)exposure to asylum seekers on a more local level on voting behavior is ex-ante not clear. Steinmayr's (2016) study of Austria provides compelling evidence that direct contact with immigrants dampens the prospects of far-right parties. In order to better distinguish between these two channels of micro and macro-exposure, we run two analyses. First, we deploy our standard research design where we link county-level inflows and EAE capacities with changes in the AfD party's vote share. Second, we conduct a local-level analysis. For Germany's most populous state, North Rhine-Westphalia (NRW), we were able to obtain municipality-level data on

refugee allocations. This more refined geographic break-down allows us to better assess the importance of direct interactions with asylum seekers.

One complication is that the AfD party was originally founded in order to oppose the Euro and the Euro-zone bailouts and only over time shifted its political focus towards migration issues. We, therefore, evaluate not only changes in the AfD party vote share, but look at the percentage of votes allotted to anti-immigrant parties in general, where we separately show specifications in which we do and do not consider the AfD party "anti-immigrant" in 2013 and adjust the vote shares accordingly.

Table 7 shows that neither refugee inflows nor EAE capacities have a statistically significant impact on the AfD party's vote share, the electoral success of right-wing parties in general, or election turnout. Of course, this is not to say that the refugee crisis has not helped the AfD party in achieving electoral success. Figure 6 strongly suggest that the party's gains in approval are driven by concerns about immigration. However, these gains were not concentrated in counties that saw larger inflows.

Counties might, however, be too big of a geographic unit to assess the micro-exposure of residents to refugees. We, thus, run an analysis using the municipality-level data from NRW. Panel B of Table 7 suggests that right-wing parties and the AfD party have indeed fared comparative less well in municipalities with larger inflows than in those with smaller inflows. Column (1) of Table 7 suggests that a one standard deviation increase in the number of asylum seekers reduces the AfD party's vote share by about 0.2 percentage points. Considering that the AfD party received about 9.4 percent of votes in NRW, this is a small but not a negligible effect. The results are similar if the aggregate vote share of all anti-immigrant parties is considered (see Columns (3) through (6)).

Our results are in line with the study by Steinmayr (2016) who found that Austrian districts with large refugee presence were less likely to vote for anti-immigration parties.[19] He uses the presence of large facilities suitable for housing larger refugee numbers as an instrument for the allocation of asylum seekers. While it would be desirable to adopt a similar identification strategy in our study, this turned out to not be feasible. Detailed data on large facilities are, unfortunately, not available and aggregate housing

[19]Of course, both the party platforms and the setup of the refugee allocation mechanism are different in Austria.

vacancies are a very weak predictor of refugee allocations in Germany, thus violating one of the major identifying assumptions (Bound et al., 1995). It is nonetheless comforting that our results, from a different country and using a different methodology, are broadly consistent - albeit smaller - with Steinmayr's (2016) findings. In summary: while there exists evidence on a macro-level connection between electoral success of anti-immigrant parties and increased refugee migration, local exposure to refugees and asylum seekers is associated with a drop in the electoral success of these parties.

6 Discussion and Sensitivity

This study provides a first evaluation of the refugee inflow to Germany in 2014-2015. Hence, it is necessarily an analysis of short-run effects. As such, there is no guarantee that trends we have uncovered in this study will hold in the long-run. Even over the course of conducting this study, new events in Germany and abroad have occurred that might shape debates and policies. Nonetheless, our analysis of short-term effects provides interesting insights that might contribute to an evidence-based debate on the economic and social effects of large migrant inflows in general and the consequences of the recent wave of refugees in particular. In a nutshell, our analysis suggests: refugees are unlikely to have displaced natives in the labor market; crime increased moderately with larger refugee inflows; and differential exposure to refugees is - if anything - negatively correlated with support for anti-immigration parties.

The identifying assumption under which these results are most credible is that trends in employment, crime, and voting behavior would have been the same in high migration counties as in low migration counties in the absence of refugee inflows. We have provided evidence that suggests that this is a fair assumption to make. Placebo tests provide another piece of evidence for the validity of our identification strategy. For that purpose, we move the time window of analysis into a time-period that was unaffected by the refugee crisis. Specifically, we re-estimate equation 1 for the years 2011 and 2013 (rather than 2013 and 2016) and attribute the refugee inflows that actually took place in

2014/15 to the year 2013.[20]

Our results for this analysis are displayed in Table 8. We cannot detect any effect of our placebo refugee inflows on the overall unemployment rate, youth unemployment, or unemployment of (Non-)Germans. This is comforting for two reasons. First, it lends additional credibility to our finding that the employment prospects of natives were - if anything - positively affected. Second, our finding that larger inflows of refugees are associated with increases in non-German unemployment does not appear to be driven by the fact that counties with large inflows were on a different unemployment trajectory prior to the start of the refugee crisis. Admittedly, our placebo results for crime are somewhat less convincing. It appears as if counties that were to absorb larger migrant inflows had been on a slight downward trajectory in terms of overall crime as well as street crime.[21] By and large, our placebo tests lend additional credibility to our results for unemployment and indicate that we might slightly underestimate the effect of refugee inflows on crime although the amount of bias is relatively small.

As an additional robustness check, we re-run all our analyses using the stock of refugees within a certain county as per the Auslaenderzentralregister (AZR) as our main explantory variable, rather than the initial allocations. As mentioned earlier, these data are likely to be somewhat less reliable and might suffer from lagged reporting. We also re-run all our analyses by including our ref_c and EAE_c-indicators separately rather than jointly. The first two rows of Table A1, show that our results are not sensitive to this change in specification. For example, the point estimates for non-German unemployment are virtually identical to the results reported in Table 4. The same is true for the crime results in Table A3. We also see that using the AZR variables on the number of registered migrants is broadly in line with our main findings in Table 6. That is, a higher number of migrants who are registered within a county is associated with small increases in violent crime, street crime, and drug offenses. Consistent with our results from Table 7, neither our main measures of refugee inflows when included separately nor our alternative AZR

[20] Obviously, we cannot conduct this exercise for our voting behavior outcome as the AfD party was only founded in February 2013.

[21] A placebo analysis separately for German and Non-German suspects is unfortunately not feasible; on the county level this distinction was made for the first time in 2013. We also cannot analyze our violent crime category in this way as it was not recorded at the county level in 2011.

measure show any association with the AfD party's vote share.

Evidence on unemployment using AZR data differs from our results using refugee inflow data. There are several potential explanations for this finding. First, the AZR data comes with a certain time lag. Hence, refugees might not (yet) show up in the data set to the same extent they are present in the refugee inflow and distribution data we collected. Moreover, heterogeneity in acceptance rates of asylum claims and the resulting legal status might play a role.

To shed additional light on our labor market results, we also collected county-level employment figures from the Federal Labor Office. Employment data have the big advantage that they allow for subgroup analyses, in particular the separate evaluation of Non-German employment figures by recent refugees and previous immigrants. Table A2 shows the results where the number of full-time employees (per 100,000) is the dependent variable. The results are broadly consistent with our main analysis: overall employment is unaffected by refugee inflows, employment of natives is positively (but not significantly) affected, and non-German employment is significantly reduced by inflows. However, once refugees are excluded from the non-German category, the size of the coefficient shrinks dramatically and ceases to be statistically significant. This is another piece of evidence that supports the notion of a mechanical effect in non-German employment: As more migrants enter a county's labor market this results in lower non-German employment (or higher unemployment) rates. But, existing workers are not actually displaced, instead it is migrants showing up in the unemployment statistics.

Hence, all labor market analyses - of unemployment rates, absolute unemployment numbers of immigrants from crisis countries, wage data analysis and now the employment data - point towards refugees themselves showing up in labor market statistics. From a policy point of view, this is a mixed bag. On the one hand, there is little indication for a displacement of native workers by refugee migrants. On the other hand, refugees do not appear to be readily absorbed into the labor market, at least in the short time period that we are able to observe. It is conceivable that the relative inflexibility of the German labor market (relative to the US or UK) might be an obstacle to a quick labor market integration of immigrant workers. Brücker et al. (2014) show that this might result in large unemployment effects. Our results lend some support to calls for additional labor

market flexibility (Bofinger et al., 2015). Another reason for the slow integration of recognized refugees into the labor market might be skill mismatches. Woessmann (2015) estimates that about two thirds of recent arrivals have "not been sufficiently educated to participate in a modern society". This rather awe-inspiring assessment suggests that Figure 7 shows by no means the end of the story, i.e. further increases in non-German unemployment are to expected if more and more unskilled workers enter the labor force. At the very least our results suggest that the unemployment rates of crisis country nationals should be closely tracked, data on the qualifications of migrants need to be collected, and - especially if the aforementioned estimates about the skill level distribution turn out to be correct - training and re-qualification efforts will have to be stepped up.

There is also little indication for large increases in crime, at least within the time period that is covered by our data. At the national level, crime rates have largely remained flat, although we observe that counties that saw larger inflows have seen (in relative terms) increases in crime, and that violent crime, street crime, and drug offenses are particularly prevalent in counties that host receptions centers. In Table A6, we re-run our main analysis separately for all crime types that were recorded consistently over time. Some but not all of these are subsumed in our main outcomes. For example, murder is part of the violent crime category. This break-down into sub-categories does not reveal large increases in either crime category. It also slightly mitigates concerns that increased police presence in high migration areas might be driving our results. If that was the case, one would expect an across-the-board increase in recorded crime. Two other types of crimes that have received substantial public interest could, unfortunately, not be fully evaluated in this study. First, anecdotal evidence suggests that crimes against refugees, and arson attacks against accommodation facilities in particular, are on the rise. Crime statistics do not separately report arson attacks specifically aimed at refugee accommodations. The number of arson cases in Germany actually declined between 2013 and 2016 from 20,009 to 19,123 reported incidents.[22] We ran a cross-sectional analysis and did not find evidence that arsons are more frequent in counties that received a larger inflow of migrants or have larger EAE capacities (see column (15) of Table A6).

In the same vein, the 2015/16 new year's eve events in Cologne during which

[22]This includes not just actual arson attacks but also the criminal act of creating fire hazards.

many women were assaulted by men of Arab or North African appearance, have led to a widespread perception that sex crimes committed by refugees have become a major issue. Unfortunately, we can shed little light on this debate. County level data of these types of offenses have also only recently been collected so that, again, we can merely conduct a cross-sectional analysis for 2016. Column (14) of Table A6 demonstrates that such an analysis fails to find any statistically significant association between the number of refugees that were allocated to a county and the number of sex crimes in said county.

7 Conclusion

The inflow of more than a million refugees to Germany in 2014/15 continues to influence the German economy and society. We analyze the short-term impacts of this largely unanticipated shock and make three related contributions.

For one, this is the first study to evaluate the labor market effects of a key event that has shaped public discourse throughout the world. We show that a significant labor supply shock of low skilled prime-age workers has not had much of a displacement effect on native workers. At the same time, our analysis raises some concerns about the ability of the German labor market to absorb this supply shock. This paper is, of course, an analysis of short-term effects. At this early stage in the post-inflow period, our results suggest that policy makers need to devote substantial resources to labor market integration of migrants.

With respect to crime rates, we find moderate increases in criminal activity, although obviously continued monitoring of the situation is warranted. In particular, the release of quarterly or even monthly (rather than annual) crime data might help in this respect. Moreover, we neither want to discount nor emphasize the degree to which attempted and actual terrorist attacks have been affected by refugee inflows and have taken a strain on police and counter-terrorism resources. But, given the data available for non-terrorism related crime and given the time period for which said data were available, there is little evidence for a crime epidemic in the immediate aftermath of refugee inflows. Lastly, while the rise of the anti-immigration AfD party is undeniable, there is

little indication that counties that experience larger migrant inflows largely vote for said party.

A second contribution of this paper is the collection of unique county-level data on refugee inflows. The data underlying our analysis accompany this paper and should be tremendously useful to other researchers. For instance, the data collected for our study will also be helpful in learning more about immigrant sorting as eventually recognized refugees are no longer required to reside in the counties that they were initially allocated to.

Finally, our study deploys a research design that is based on a credible natural experiment. As such it advances the literature on labor market impacts of immigration, sheds additional light on the link between immigration and crime, and provides insights on the effect of immigration on voting behavior. Of course, the natural experiment created by refugee inflows to Germany differs markedly from other natural experiments, in terms of the sheer size of the inflow, the presumed skill composition of the immigrants, and the fact that much of the migration may be transient in nature. Since the subject matter of this study are at times divisive issues, we want to stress that our results should be interpreted as short-term effects. But, the short-term effect identified in this paper have shown some persistence: the native unemployment rate has continued to drop in 2017 while the absolute number of non-German job-seekers has continued to increase[23]; a recent report by the Federal Ministry of the Interior shows that aggregate crime rates have been largely flat in 2017 (PKS, 2018), albeit with increases in violent crimes and drug crimes which is consistent with our findings.

While prima facie, our results offer useful indications for long-term effects, they are certainly not the last word on this important issue. Given the contentiousness of the debate, we encourage more research on this topic. The natural experiment presented by the refugee inflows provides a useful setting to evaluate their effects and design evidence-based policies. We hope that this paper serves as a starting point for future analyses of what is likely to remain a major economic and social issue for years to come.

[23]Unfortunately, the Federal Labor Office ceased to publish unemployment rates for non-Germans in 2017.

References

Acemoglu, D., D. Autor, and D. Lyle (2004). Women, War, and Wages: The Effect of Female Labor Supply on the Wage Structure at Midcentury. *Journal of Political Economy 112*(3), 497–551.

Aydemir, A. and G. J. Borjas (2007, June). Cross-Country Variation in the Impact of International Migration: Canada, Mexico, and the United States. *Journal of the European Economic Association 5*(4), 663–708.

BAMF (2016). Das Bundesamt in Zahlen 2015 - Modul Asyl. Technical report, Federal Office for Migration and Refugees (BAMF).

Bell, B., F. Fasani, and S. Machin (2013, October). Crime and Immigration: Evidence from Large Immigrant Waves. *Review of Economics & Statistics 95*(4), 1278–1290.

Bianchi, M., P. Buonanno, and P. Pinotti (2012, December). Do Immigrants Cause Crime? *Journal of the European Economic Association 10*(6), 1318–1347.

BMI (2016). Press Release 6 January 2016. Technical report, Federal Ministry of the Interior.

Bofinger, P., L. P. Feld, I. Schnabel, C. M. Schmidt, and V. Wieland (2015). Annual economic report 2015/16 - focus on future viability. Technical report, German Council of Economic Experts.

Borjas, G. J. (2003). The Labor Demand Curve Is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market. *The Quarterly Journal of Economics 118*(4), 1335–1374.

Borjas, G. J. (2015). The wage impact of the marielitos: A reappraisal. Technical report, National Bureau of Economic Research.

Borjas, G. J., J. Grogger, and G. H. Hanson (2012). Comment: On Estimating Elasticities of Substition. *Journal of the European Economic Association 10*(1), 198–210.

Bound, J., D. A. Jaeger, and R. M. Baker (1995). Problems with instrumental variables estimation when the correlation between the instruments and the endogenous explanatory variable is weak. *Journal of the American statistical association 90*(430), 443–450.

Brücker, H., A. Hauptmann, E. J. Jahn, and R. Upward (2014). Migration and imperfect labor markets: Theory and cross-country evidence from denmark, germany and the uk. *European Economic Review 66*, 205–225.

Brücker, H., A. Hauptmann, and E. Vallizadeh (2015). Flüchtlinge und andere Migranten am deutschen Arbeitsmarkt: Der Stand im September 2015. Research Report 14/2015, IAB - Aktuelle Berichte.

Butcher, K. F. and A. M. Piehl (1998). Recent Immigrants: Unexpected Implications for Crime and Incarceration. *Industrial & Labor Relations Review 51*(4), 654–679.

Card, D. (1990). The Impact of the Mariel Boatlift on the Miami Labor Market. *Industrial and Labor Relations Review 43*(2), 245–257.

Card, D. (2001). Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration. *Journal of Labor Economics 19*(1), 22.

Card, D. (2012). Comment: The Elusive Search for Negative Wage Impacts of Immigration. *Journal of the European Economic Association 10*(1), 211–215.

Card, D. and A. B. Krueger (1994). Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania. *American Economic Review 84*(4), 772–93.

Damm, A. (2009). Ethnic Enclaves and Immigrant Labor Market Outcomes: Quasi?Experimental Evidence. *Journal of Labor Economics 27*(2), 281–314.

D'Amuri, F., G. I. P. Ottaviano, and G. Peri (2010). The labor market impact of immigration in Western Germany in the 1990s. *European Economic Review 54*(4), 550–570.

Dustmann, C., T. Frattini, and I. P. Preston (2013, January). The Effect of Immigration along the Distribution of Wages. *Review of Economic Studies 80*(1), 145–173.

Dustmann, C. and I. P. Preston (2007). Racial and Economic Factors in Attitudes to Immigration. *The B.E. Journal of Economic Analysis & Policy 7*(1).

Dustmann, C., U. Schoeneberg, and J. Stuhler (2016). The Impact of Immigration on Local Labor Markets: Evidence from the Opening of the Czech-German Border. *The Quarterly Journal of Economics (forthcoming)*.

Edin, P.-A., P. Fredriksson, and O. slund (2003). Ethnic Enclaves and the Economic Success of Immigrants: Evidence from a Natural Experiment. *The Quarterly Journal of Economics 118*(1), 329–357.

GdP (2015). Press Release 30 December 2015. Technical report, Union of the Federal Police (GdP Bundespolizei).

Glitz, A. (2012). The Labor Market Impact of Immigration: A Quasi-Experiment Exploiting Immigrant Location Rules in Germany. *Journal of Labor Economics 30*(1), 175–213.

Gould, E. D., V. Lavy, and M. D. Paserman (2004). Immigrating to Opportunity: Estimating the Effect of School Quality Using a Natural Experiment on Ethiopians in Israel. *The Quarterly Journal of Economics 119*(2), 489–526.

Hunt, J. (1992, April). The Impact of the 1962 Repatriates from Algeria on the French Labor Market. *Industrial and Labor Relations Review 45*(3), 556–572.

Mayda, A. M. (2006). Who Is against Immigration? A Cross-Country Investigation of Individual Attitudes toward Immigrants. *The Review of Economics and Statistics 88*(3), 510–530.

Piopiunik, M. and J. Ruhose (2017). Immigration, regional conditions, and crime: Evidence from an allocation policy in germany. *European Economic Review 92*, 258–282.

Pischke, J.-S. and J. Velling (1997). Employment Effects of Immigration to Germany: An Analysis Based on Local Labor Markets. *The Review of Economics and Statistics 79*(4), 594–604.

PKS (2018). Report on crime statistics 2017. Technical report, Federal Ministry of the Interior, June 2018.

Steinmayr, A. (2016). Exposure to refugees and voting for the far-right:(unexpected) results from austria. Technical report, IZA Discussion Paper No. 9790.

Woessmann, L. (2015). Ifo Economist Woessmann Calls for Systematic Registration of Education Levels of Refugees. Technical report, Press Release 4 Dec 2015, CESifo Institute.

Worbs, S. and E. Bund (2016). Qualification structure, labour market participation and future orientations. Technical report, BAMF Brief Analysis.

Tables and Figures

Table 1: Refugee Allocations to States' Subordinate Counties and EAE Capacities

		County Allocations		
	Federal Quota	total	percent	EAE capacities
Baden-Wuertemberg	12.8%	105,680	11.5%	26,400
Bavaria	15.5%	106,763	11.6%	22,377
Berlin	5.1%	67,228	7.3%	n/a
Brandenburg	3.1%	30,930	3.4%	5,092
Bremen	1.0%	12,507	1.4%	n/a
Hamburg	2.5%	28,937	3.1%	n/a
Hesse	7.4%	57,575	6.3%	22,047
Mecklenburg Western Pomerania	2.0%	22,614	2.5%	989
Lower Saxony	9.3%	84,475	9.2%	5,028
North Rhine-Westphalia (NRW)	21.2%	224,589	24.4%	16,245
Rhineland Palatinate	4.8%	34,999	3.8%	10,622
Saarland	1.2%	12,192	1.3%	1,300
Saxony	5.1%	41,423	4.5%	16,845
Saxony-Anhalt	2.8%	27,736	3.0%	6,259
Schleswig-Holstein	3.4%	36,500	4.0%	15,667
Thuringia	2.7%	24,657	2.7%	6,951
Total	100.0%	918,805	100.0%	148,414

Table relates federal quota ("Koenigssteiner Schluessel") of migrants who are supposed to be allocated to the states to the number of refugees forwarded by states to their subordinate counties and the capacities that exist to house refugees in state-run reception centers (EAEs). Berlin, Bremen, and Hamburg are city states and have no subordinate counties, hence no distinction between refugees that are housed by counties and those in state-run facilities is possible. In the data the EAE capacities are coded as zero for all three city states.

Table 2: Summary Statistics: Table of Means

	(1)	(2)	(3)	(4)	(5)	(6)
	2013 (Pre-Treatment)			2016/17 (Post-Treatment)		
	All	High Migration	Low Migration	All	High Migration	Low Migration
Inflow Measures						
Refugees per 100,000	0	0	0	1,103	1,226	980.2
EAE Capacity per 100,000	0	0	0	220.1	433.4	6.802
Registered (Total) per 100,000	0.001	0.001	0.001	395.0	442.4	347.5
Outcomes						
Unemploment Rate (Total)	6.261	7.058	5.464	5.506	6.145	4.868
Youth Unemployment Rate	5.198	5.887	4.509	5.035	5.663	4.407
Unemployment Rate Non-German	13.95	15.75	12.15	17.69	20.09	15.29
Unemployment German	4.858	5.556	4.161	2.245	2.622	1.869
All Employed	36,663	37,425	35,900	37,493	38,271	36,715
Employed Non-German	2,671	2,435	2,906	3,023	2,773	3,274
Employed Refugees	63.77	69.06	58.49	401.5	384.4	418.6
Marginally Employed Refugees	24.88	28.48	21.28	77.97	89.03	66.96
Crimes per 100,000 (unadjusted)	6,417	6,977	5,857	6,863	7,154	6,573
Crimes per 100,000 (adjusted)	6,417	6,977	5,857	6,127	6,682	5,573
German Suspects per 100,000	2,127	2,226	2,029	1,886	1,973	1,798
Non-German Suspects per 100,000	624.8	641.2	608.4	727.1	750.6	703.6
Percentage AfD party	4.704	4.702	4.705	13.38	13.53	13.23
Percentage Anti-Immigrant	6.469	6.501	6.437	13.97	14.15	13.79
County Characteristics						
GDP per Capita	32,783	33,066	32,500	34,661	34,880	34,442
Youth Coefficient	30.11	29.57	30.64	30.30	29.88	30.73
Share Male	0.490	0.490	0.491	0.494	0.493	0.494
Share Non-German	0.0710	0.0673	0.0747	0.0891	0.0863	0.0919
Population	200,308	233,860	166,755	201,984	235,838	168,129
Share Housing Benefit Recipients	0.00743	0.00845	0.00640	0.00518	0.00591	0.00445
Observations	402	201	201	402	201	201

Table of means. Column (1) shows the means in outcomes as of 2013, prior to the refugee crisis. Column (2) and (3) display the means for the same outcomes for counties that were to experience a large inflow of migrants and counties that were to experience a small inflow of migrations. High migration counties are counties with refugee inflows of at least 1,260 people per 100,000 in population or which opened a reception center with at least 200 beds. Low migration counties are counties that meet neither condition. Columns (4) through (6) display outcomes of interest in the post-treatment period. That is, the fourth quarter of 2016 for employment outcomes, the 2016 annual aggregate for crime outcomes, and the 2017 federal election outcomes. Information on county characteristics are as of 31 December 2012 and 2015, respectively.

Table 3: Potential Determinants of Refugee Inflows

		Regression						
	Mean	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GDP per Capita	32.782	0.0045						0.0108
	(14.176)	(0.0053)						(0.0070)
Youth Coefficient	30.12		-0.0349					15.6450
	(3.663)		(9.0416)					(13.6358)
Share Male	49.04			-0.3462				-0.5644
	(0.668)			(0.4929)				(0.4688)
Share German	92.9				0.1564**			0.3886***
	(4.615)				(0.0766)			(0.0960)
Share Housing Benefits	7.43					0.0832		0.0134
	(3.551)					(0.1148)		(0.0953)
Share of Empty Housing†	4.079						9.4463	8.5248
	(2.170)						(10.1440)	(16.4033)

Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.
Each column is a separate county-level regression of the number of refugees (per 100,000) allocated to a county on county characteristics (as of the end of 2013). All estimates are adjusted for state fixed effects, each county receives the same weight. GDP per Capita is measured in €1000, the youth coefficient is the total number of people younger than 20 years old divided by the number of people who are between 20 and 64, the shares male and German are the percent of the county population that are male and German citizens respectively, the share of housing benefit recipients is per 1,000.
† Housing vacancies are the number of empty living spaces per 1,000 inhabitants as of Zensus 2011.

Table 4: Regression Results: Inflows of Refugees and Change in Unemployment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Overall		Youth		German		Non-German	
Mean Unempl. Rate	6.26		5.19		4.85		13.95	
(SD)	2.94		2.74		2.9		5.8	
Refugees	-0.00009	0.00011*	0.0000	0.0001	-0.0008**	-0.0006**	0.0025***	0.0018***
	(0.0001)	(0.00007)	(0.0001)	(0.0001)	(0.0003)	(0.0003)	(0.0009)	(0.0007)
EAE Capacity	-0.0001	-0.0000	-0.0000	-0.0001	0.0002	0.0004**	-0.0008	-0.0005
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0007)	(0.0007)
Observations	402	402	402	402	402	402	402	402
R-squared	0.0088	0.5081	0.0005	0.0174	0.0647	0.2221	0.0596	0.2167
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.
Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1. The outcome variables are the unemployment rate for all workers (columns (1) and (2)), workers aged 15 to 25 (columns (3) and (4)), and workers who are (not) German citizens (columns (5) through (8)). The two main explanatory are the number of refugees allocated to a county during the 2014/15 refugee crisis and the number reception center (EAE) beds in the county (both per 100,000). Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Table 5: Regression Results: Inflows of Refugees and Change in Median Monthly Wages

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Overall		Youth		German		Non-German		No-Degree	
Mean	2820.87		2073.27		2422.66		2861.87		2357.25	
(SD)	441.69		221.58		355.78		466.87		317.76	
Refugees	0.0035	0.0037	-0.0106**	-0.0095*	0.0005	-0.0038	-0.0083	-0.0046	0.0021	-0.0021
	(0.0067)	(0.0062)	(0.0044)	(0.0050)	(0.0116)	(0.0122)	(0.0104)	(0.0082)	(0.0114)	(0.0129)
EAE Capacity	0.0028	0.0061	0.0005	-0.0002	-0.0132	0.0022	-0.0010	0.0012	0.0056	0.0067
	(0.0042)	(0.0045)	(0.0056)	(0.0062)	(0.0149)	(0.0145)	(0.0056)	(0.0053)	(0.0117)	(0.0125)
Observations	402	402	346	346	275	275	402	402	331	331
R-squared	0.0027	0.0430	0.0086	0.1370	0.0021	0.0368	0.0079	0.1286	0.0009	0.0428
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.
The number of observation varies as there are missing data points for certain sub-populations due to limited sample size and data protection regulation.
Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1. The outcome variables are the median monthly wages for full-time employed for all workers (columns (1) and (2)), workers aged 15 to 25 (columns (3) and (4)), and workers who are (not) German citizens (columns (5) through (8)) and workers without a college or vocational degree (columns (9) and (10)). The two main explanatory are the number of refugees allocated to a county during the 2014/15 refugee crisis and the number reception center (EAE) beds in the county (both per 100,000). Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Table 6: Regression Results: Inflows of Refugees and Change in Crime

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All Crimes	All Cases Mean: 6417.21		German Suspects Mean: 2127.38		Non-German Suspects Mean: 624.80	
refugees	0.2111***	0.2347***	0.0239	0.0373***	0.1485***	0.1442***
	(0.0718)	(0.0742)	(0.0186)	(0.0127)	(0.0409)	(0.0402)
EAEcap	-0.1809	-0.1257	-0.0396*	0.0078	-0.1079	-0.1008
	(0.1481)	(0.1253)	(0.0215)	(0.0165)	(0.0979)	(0.0798)
Panel B: Violent Crimes	All Cases Mean: 196.99		German Suspects Mean: 155.83		Non-German Suspects Mean: 44.51	
refugees	0.0070*	0.0061	0.0013	0.0015	0.0022	0.0019
	(0.0041)	(0.0039)	(0.0023)	(0.0025)	(0.0020)	(0.0020)
EAEcap	0.0075*	0.0088**	-0.0004	0.0036	0.0109***	0.0118***
	(0.0042)	(0.0040)	(0.0041)	(0.0039)	(0.0020)	(0.0018)
Panel C: Street Crime	All Cases Mean: 1320.78		German Suspects Mean: 194.94		Non-German Suspects Mean: 46.26	
refugees	0.0347*	0.0437**	-0.0001	0.0010	0.0024	0.0023
	(0.0197)	(0.0189)	(0.0054)	(0.0045)	(0.0025)	(0.0021)
EAEcap	-0.0092	0.0034	-0.0022	0.0023	0.0071***	0.0049**
	(0.0335)	(0.0312)	(0.0048)	(0.0042)	(0.0022)	(0.0021)
Panel D: Drug Offenses	All Cases Mean: 298.74		German Suspects Mean: 219.81		Non-German Suspects Mean: 43.35	
refugees	-0.0061	-0.0091	0.0052	0.0028	-0.0081*	-0.0073
	(0.0104)	(0.0113)	(0.0064)	(0.0068)	(0.0045)	(0.0045)
EAEcap	0.0380***	0.0294**	0.0208***	0.0178**	0.0095**	0.0064
	(0.0097)	(0.0118)	(0.0061)	(0.0075)	(0.0048)	(0.0043)
Covariates	No	Yes	No	Yes	No	Yes
Observations	402	402	402	402	402	402
R-squared	0.0337	0.0730	0.0144	0.1680	0.0707	0.1116

Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.

Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1. In Panel A, the outcome variables are the number of crimes per population of 100,000, the number of cases with German suspect(s) (per 100,000), and the number of cases with Non-German citizen(s) as suspect(s) (per 100,000). Offenses against immigration laws (e.g. unauthorized entry of German territory) are ignored. In Panel B, the outcome variables are the number of violent crimes with the same distinction between German and non-German suspects in columns (3) through (6). In Panels C and D the outcome variables are the number of street crimes and drug offenses respectively. The two main explanatory are the number of refugees allocated to a county during the 2014/15 refugee crisis and the number reception center (EAE) beds in the county (both per 100,000). Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

R-squared statistics refer to estimates in Panel A.

Table 7: Regression Results: Inflows of Refugees and Voting Behavior

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: County Level	AfD Vote Share		Right Wing Vote Share		Right Wing Vote Share (adj.)		Election Turnout	
Refugees	-0.000	-0.001	0.000	-0.001	0.000	-0.001*	-0.001	-0.001
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
EAE Capacity	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Observations	402	402	402	402	402	402	402	402
R-squared	0.002	0.375	0.002	0.365	0.003	0.378	0.002	0.375
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
Panel B: Municipality Level NRW	AfD Vote Share		Right Wing Vote Share		Right Wing Vote Share (adj.)		Election Turnout	
Refugees	-0.0004***	-0.0002	-0.0003**	-0.0001	-0.0006***	-0.0003	0.0001	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0002)	(0.0001)	(0.0001)
EAE Capacity	-0.0002***	-0.0004***	-0.0002**	-0.0003**	-0.0003***	-0.0004***	-0.0000	-0.0000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Observations	396	396	396	396	396	396	396	396
R-squared	0.008	0.026	0.012	0.100	0.035	0.177	0.020	0.111
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

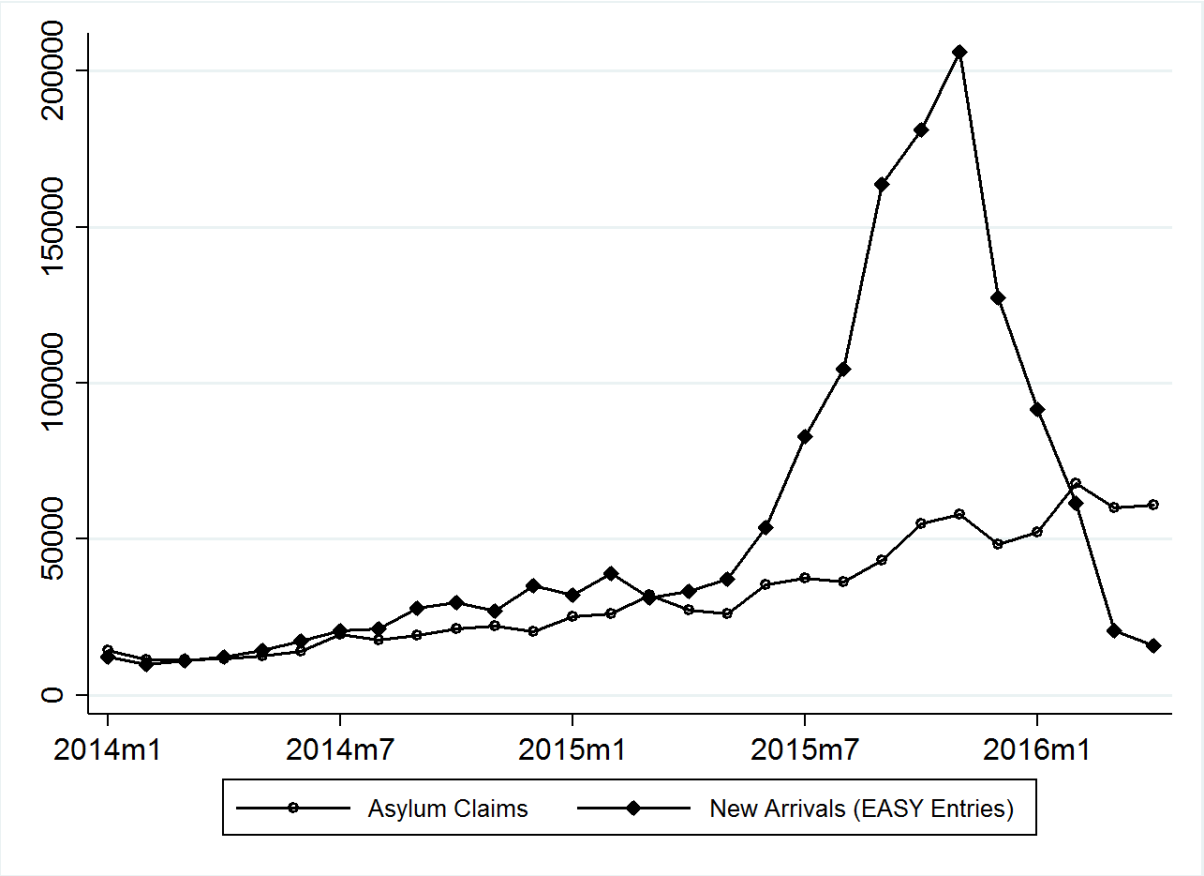
Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.
Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1. That is, the difference between the corresponding outcome in the 2017 and 2013 federal election is regressed on our two main explanatory variables (and changes in covariates). The two main explanatory are the number of refugees allocated to a county during the 2014/15 refugee crisis and the number reception center (EAE) beds in the county (both per 100,000). Panel A represents results at the county level for all of Germany, while Panel B assesses results for North Rhine-Westphalia at the municipality level. Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Table 8: Placebo Regressions: Inflows of Refugees and Change in Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Unemployment				Crime		
	General	Youth	Non-German	German	All Crimes	Street Crimes	Drug Offenses
refugees	−0.0000	0.0001	0.0001	−0.0000	−0.2944***	−0.0694**	−0.0149
	(0.0001)	(0.0001)	(0.0003)	(0.0001)	(0.0809)	(0.0291)	(0.0116)
EAEcap	−0.0001	−0.0001	0.0001	−0.0001	0.1384*	−0.0109	0.0104
	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0794)	(0.0293)	(0.0102)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	402	402	402	402	402	402	402
R-squared	0.2267	0.0852	0.0425	0.2158	0.1119	0.0517	0.0224

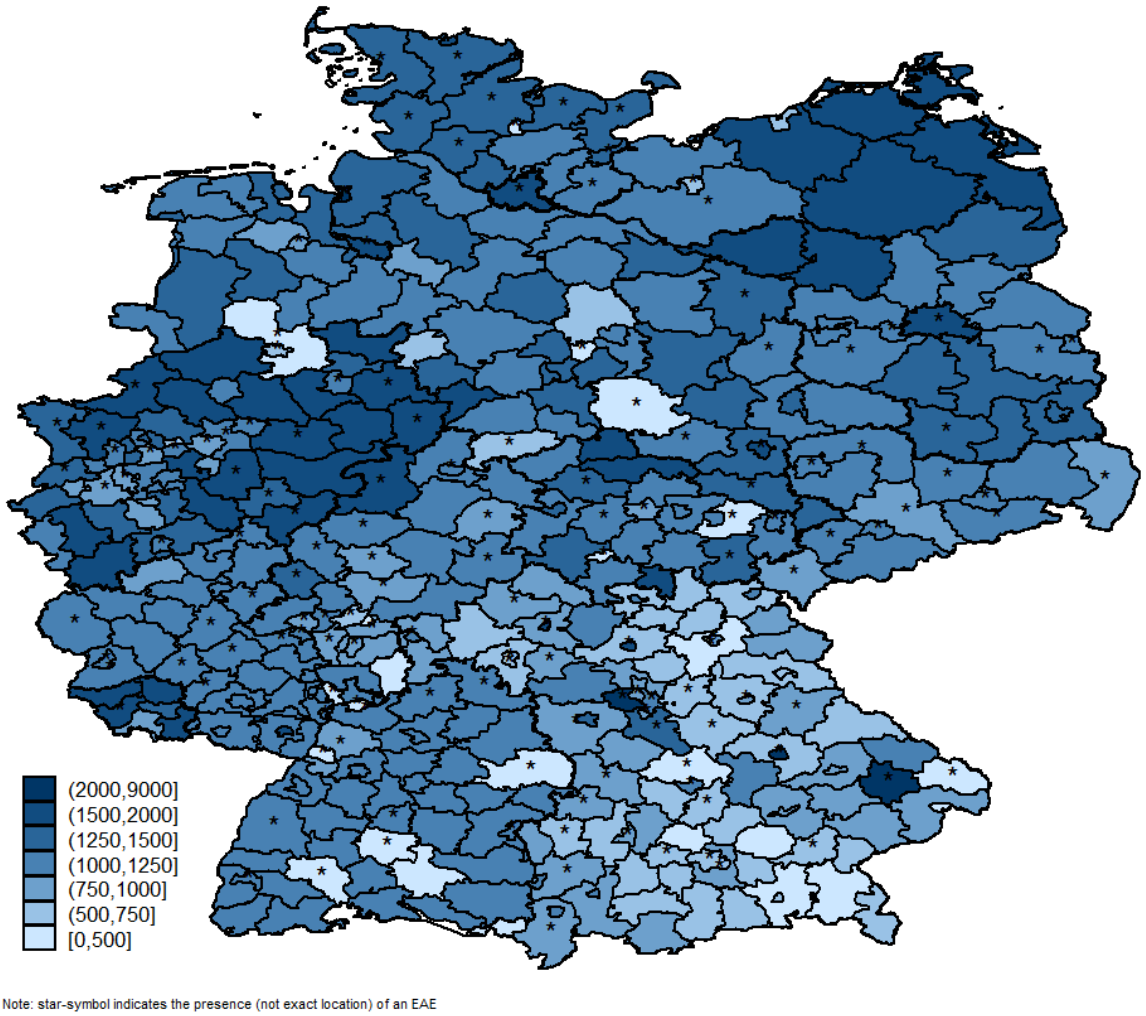
Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses. Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1, but based on data from 2013 and 2011 respectively. Refugee inflows and reception center (EAE) capacities were set to 2014/15 aggregates (both per 100,000). The outcome variables are the general unemployment rate, the unemployment rate for 15 to 25-year olds, the unemployment rate for workers who are (not) German citizens, the number of crimes, the number of street crimes, and the number of drug offenses (all three per 100,000 population). Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Figure 1: Refugee Arrivals and Asylum Claims Filed



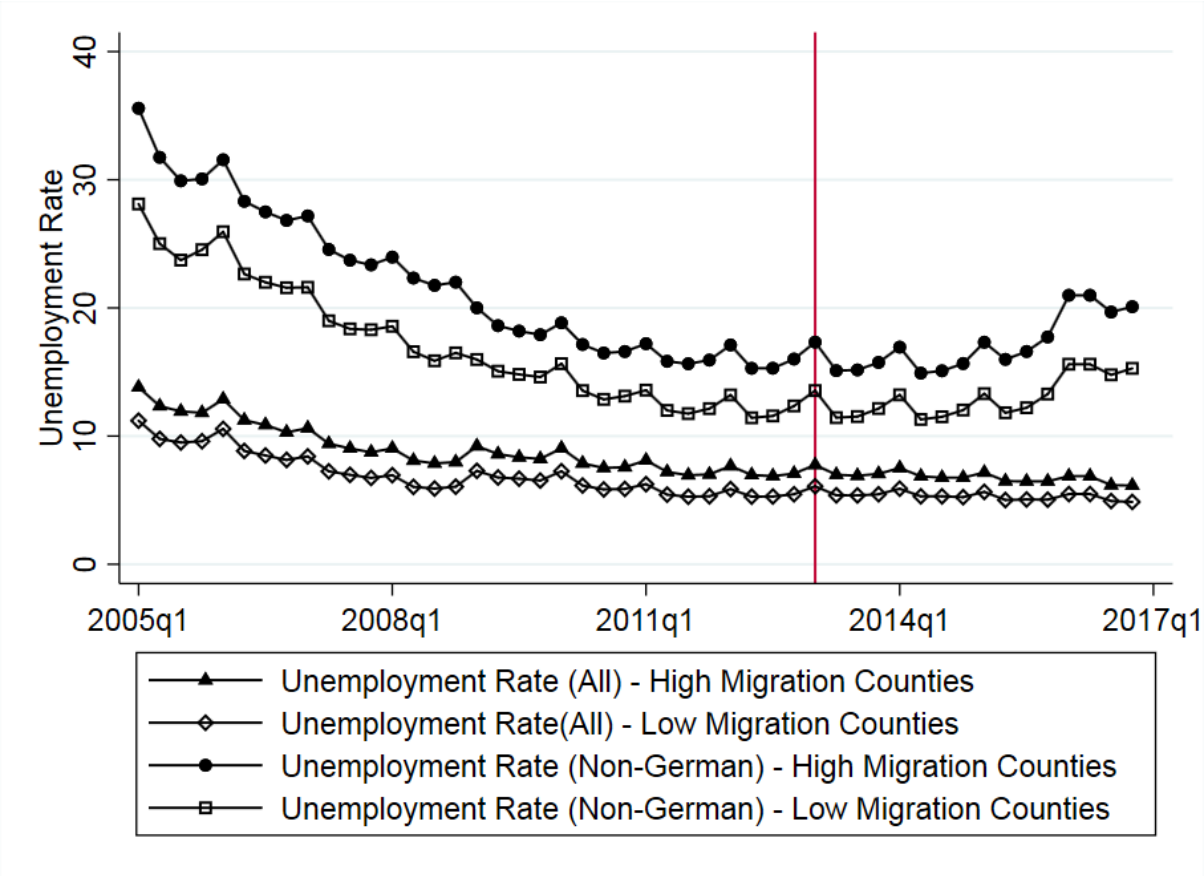
Source: Federal Ministry of the Interior and Federal Office for Migration and Refugees
Notes: This graph plots the number of asylum applications that were filed and the number of new arrivals to Germany as they were entered into the federal registration system, EASY, between January 2014 and April 2016. The total for 2015 is 1,091,984 EASY entries, for 2014 it is 238,676.

Figure 2: Refugee Allocations per County



Source: State Ministries of the Interior or similar concerned state-level authorities
Notes: Map shows all 402 German counties and the influx of refugees into these counties per 100,000. Stars indicate the presence of a reception center (EAE).

Figure 3: Unemployment Rates Over Time

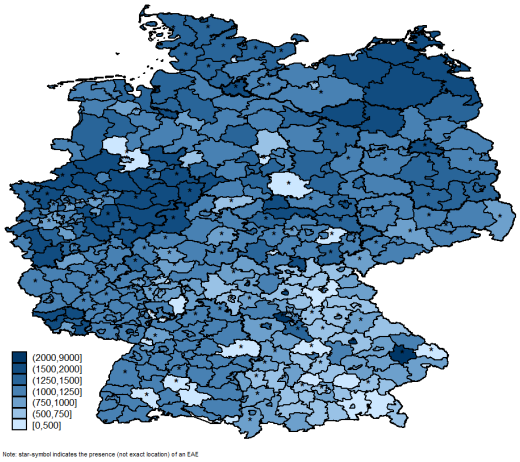


Source: Federal Employment Agency

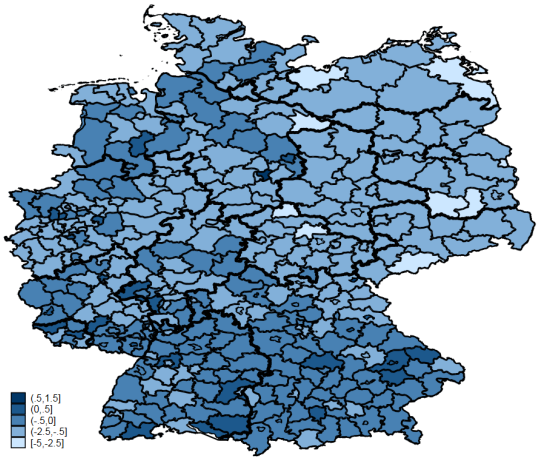
Notes: This figure shows quarterly unemployment rates (1/2005 - 1/2016) separately by low and high migration counties. High migration counties were allocated more than 1,260 refugees (per 100,000) or host a reception center (EAE) with at least 200 beds. The bottom two lines show the general unemployment rate, the top two lines show unemployment among the non-German population.

Figure 4: Refugees and Change in Outcomes by County

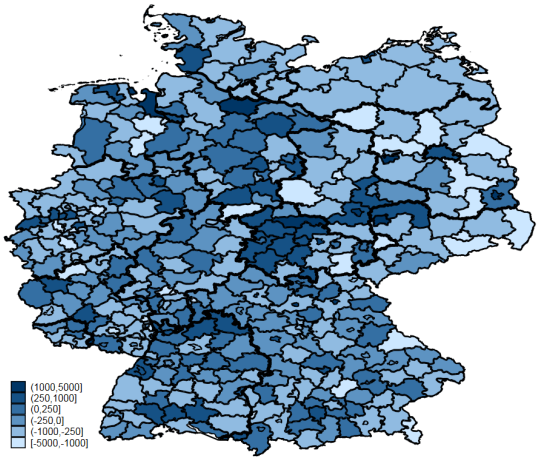
(a) Influx of Refugees



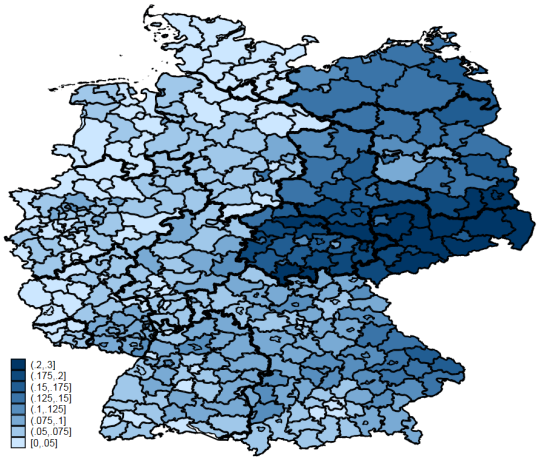
(b) Change in Unemployment Rate



(c) Change in Number of Crimes



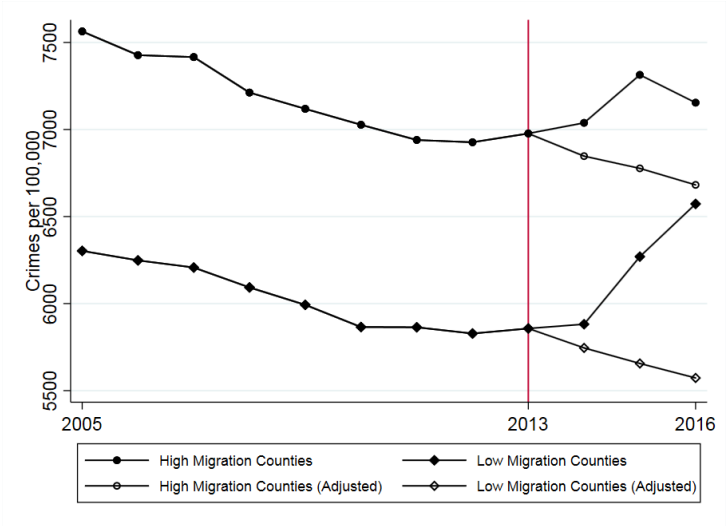
(d) Change in AfD Vote Share



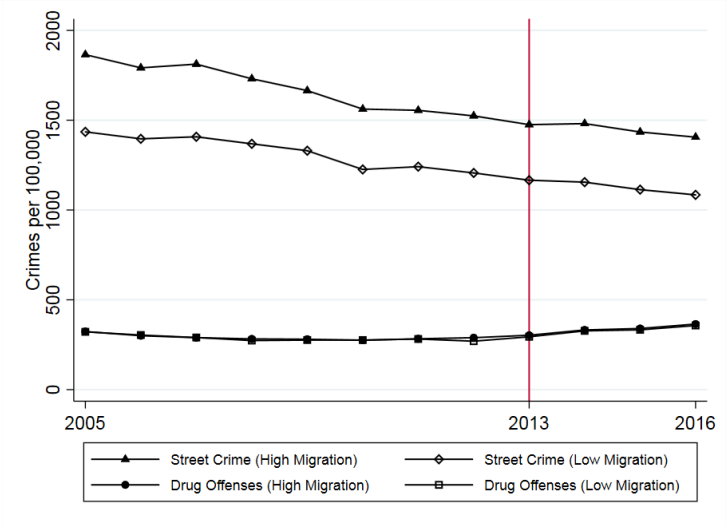
Source: State Ministries of the Interior or similar concerned state-level authorities
Notes: Maps show all 402 German counties, the influx of refugees into these counties and changes in the main outcomes of interests between 2013 and 2016/17. Stars indicate the presence of a reception center (EAE). Note that the map on the top left is identical to Figure 2. Maps (a) and (c) are per 100,000 inhabitants.

Figure 5: Crime Rates Over Time

(a) All Crimes

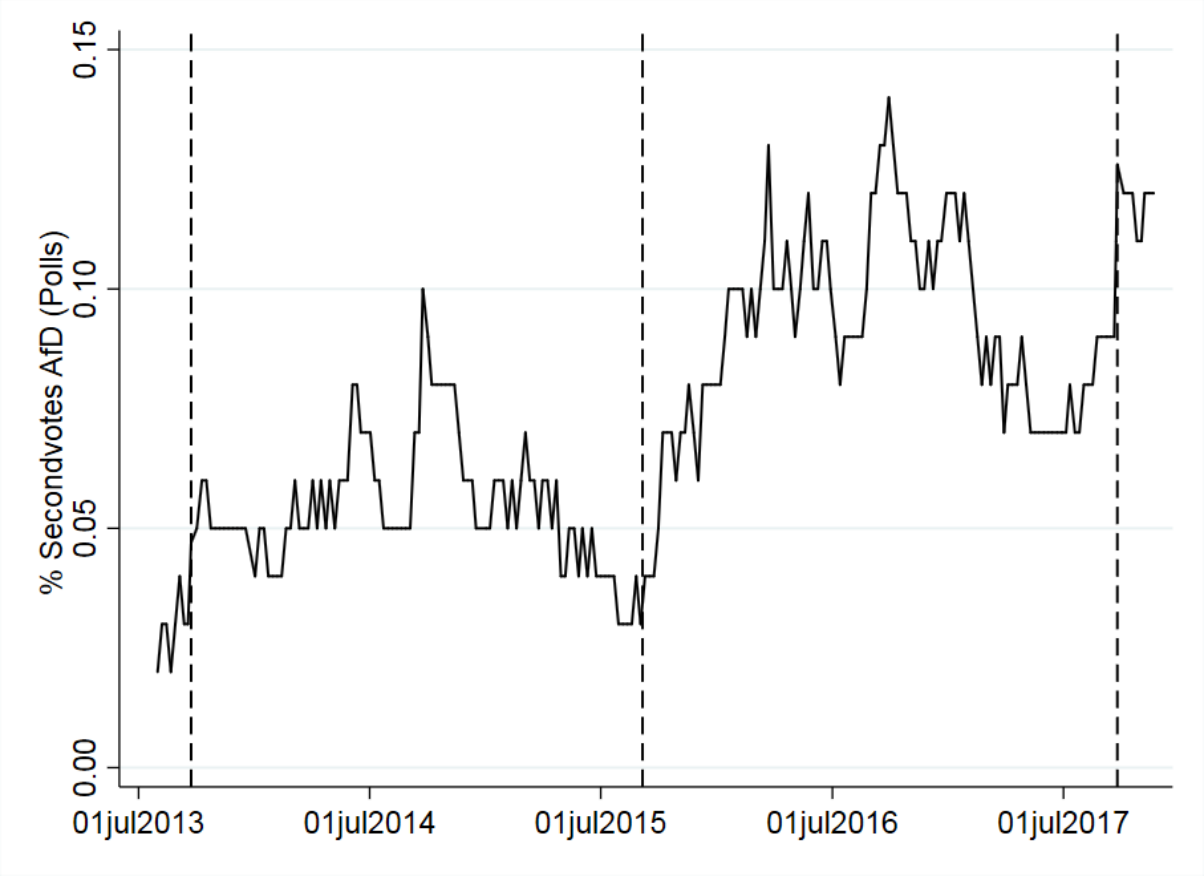


(b) Street Crimes and Drug Crimes



Source: Federal Criminal Police Office (BKA)
Notes: This figure shows annual crime rates (2005-2016) separately by low and high migration counties. High migration counties were allocated more than 1,260 refugees (per 100,000) or host a reception center (EAE) with at least 200 beds. The top two lines illustrate the number of street crimes (per 100,000), the bottom two lines show the number of drug related crimes (per 100,000).

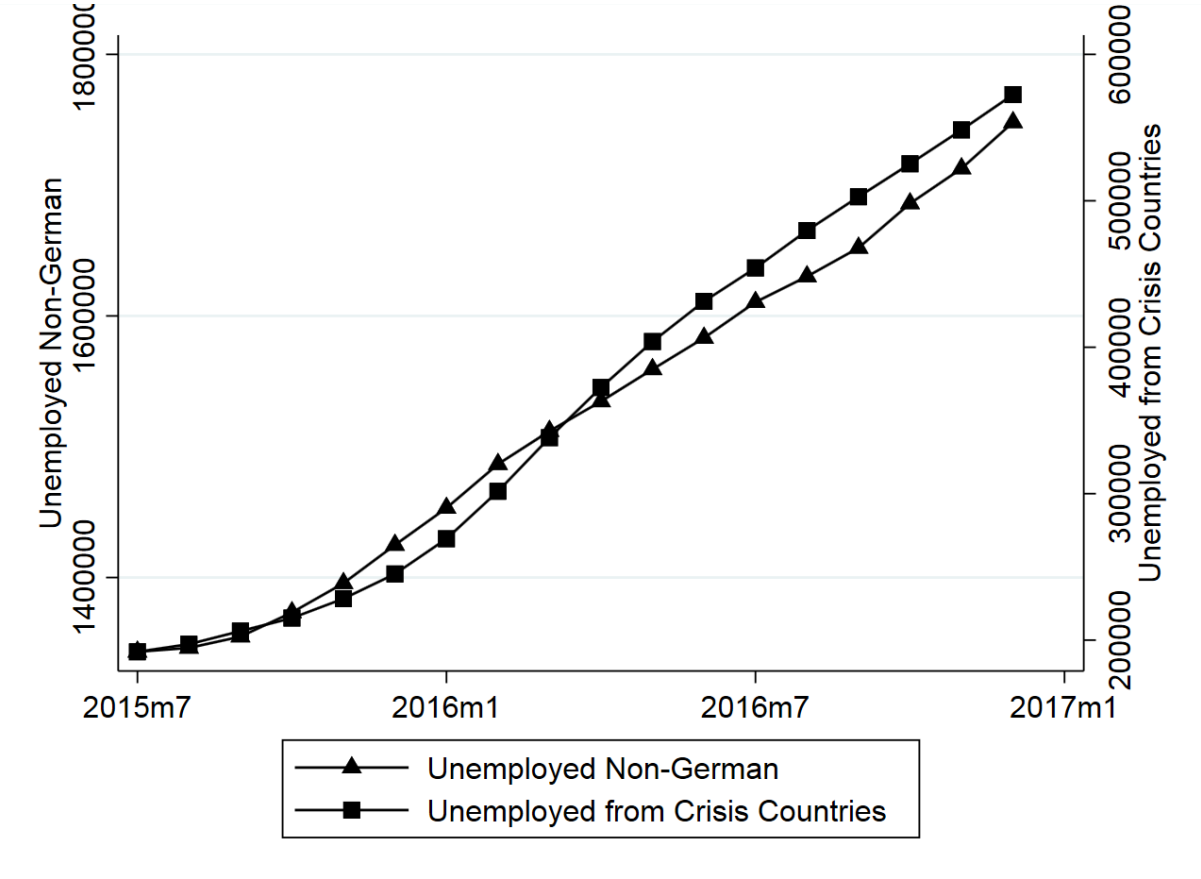
Figure 6: National AfD Party Polls



Source: Forsa

Notes: These are national polls and election results for the AfD party over time. The left vertical line is placed at the date of the 2013 federal election (22 September 2013) and the value at this point reflects the actual percentage of votes cast for the AfD party. The vertical line on the right is placed at the the date of the latest federal election (24 September 2017). All other measures of AfD popularity are based on polls conducted by the polling institute Forsa and are based on surveys of about 1,000 participants. The dashed vertical line in the middle is placed on 5 September 2015 which is widely seen as the beginning of the refugee crisis.

Figure 7: Number of Non-German Unemployed and Unemployed from Crisis Countries



Source: Federal Employment Agency

Notes: This graph plots the number of Non-German citizens who have registered for unemployment benefits with the Federal Employment Agency (left-handside y-axis). It also plots the number of citizens from the eight most common counties of origin for refugees (Syria, Iraq, Afghanistan, Iran, Pakistan, Nigeria, Eritrea, and Somalia) on the right-handside y-axis. Note that the data underlying this graph are based on a different definition of unemployment than the data in the previous graphs and tables. The data here include workers who are taking part in active labor market policy programs, such as re-qualifications and other government programs.

8 Appendix

Table A1: Inflows of Refugees and Change in Unemployment - Different and Separate Migrant Measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: County Allocations Only	Overall		Youth		German		Non-German	
refugees	−0.0001	0.0001*	0.0000	0.0001	−0.0008**	−0.0006**	0.0025**	0.0018**
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0004)	(0.0003)	(0.0011)	(0.0008)
Observations	402	402	402	402	402	402	402	402
R-squared	0.0041	0.5074	0.0001	0.0162	0.0609	0.2104	0.0545	0.2148
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
Panel B: EAE Capacities Only	Overall		Youth		German		Non-German	
EAEcap	−0.0001	−0.0000	−0.0000	−0.0001	0.0002	0.0003***	−0.0007	−0.0004
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0006)	(0.0006)
Observations	402	402	402	402	402	402	402	402
R-squared	0.0050	0.5027	0.0003	0.0165	0.0037	0.1901	0.0027	0.1838
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
Panel C: Registered Migrants	Overall		Youth		German		Non-German	
△ Registered Migrants	0.00013**	0.00017***	0.00023**	0.00024**	0.0000	0.0000	0.0004	0.0004
	(0.00005)	(0.00003)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0003)	(0.0003)
Observations	402	402	402	402	402	402	402	402
R-squared	0.0054	0.5122	0.0083	0.0241	0.0001	0.1741	0.0011	0.1901
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

Notes: ∗∗∗/∗∗/∗ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.
Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1, but only including one of our two main explanatory variables at a time. Panel A assesses the effect of number of refugees allocated to a county (per 100,000) during the 2014/15 refugee crisis without controls for (state-run) EAE capacities. Panel B assess the effect of the number of (state-run) reception center (EAE) beds in the county (per 100,000) without controlling for number of refugees allocated to a county. Panel C assess the effect of the increase in all registered migrants from the main refugee countries as present in the central registry of foreigners (AZR). The outcome variables are the unemployment rate for all workers (columns (1) and (2)), workers aged 15 to 25 (columns (3) and (4)), and workers who are (not) German citizens (columns (5) through (8)). Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Table A2: Regression Results: Inflows of Refugees and Change in Employment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Overall		German		Non-German		Non-German w/o Refugee	
Average Employment	36666		33979		2670		2606	
(SD)	(12133.07)		(11068.01)		(1951.09)		(1900.26)	
Refugees	-0.0826	-0.0331	0.0057	0.0304	-0.0884**	-0.0636**	-0.0235	-0.0332
	(0.0514)	(0.0501)	(0.0444)	(0.0484)	(0.0363)	(0.0308)	(0.0270)	(0.0242)
EAE Capacity	0.0810	0.0551	0.0451	0.0331	0.0353	0.0215	0.0081	0.0119
	(0.0669)	(0.0713)	(0.0581)	(0.0621)	(0.0239)	(0.0232)	(0.0157)	(0.0155)
Observations	402	402	402	402	402	402	402	402
R-squared	0.0106	0.0673	0.0032	0.0303	0.0377	0.1242	0.0046	0.0331
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.
Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1. The outcome variables are the total number of full-time employed per 100,100 population (columns (1) and (2)), Germans (columns (3) and (4)), Non-Germans (columns (5) and (6)), and Non-Germans without refugees (columns (7) and (8)). The two main explanatory are the number of refugees allocated to a county during the 2014/15 refugee crisis and the number reception center (EAE) beds in the county (both per 100,000). Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Table A3: Inflows of Refugees and Change in Crime - Different and Separate Migrant Measures

	(1)	(2)	(3)	(4)
	All Crimes	Violent Crimes	Street Crimes	Drug Offenses
refugees	0.2290***	0.0065**	0.0438**	-0.0077
	(0.0818)	(0.0033)	(0.0181)	(0.0153)
EAEcap	-0.1139	0.0091**	0.0056	0.0290**
	(0.1292)	(0.0041)	(0.0319)	(0.0115)
△ Registered Migrants	0.0585	0.0056**	0.0294**	0.0158**
	(0.0682)	(0.0026)	(0.0136)	(0.0072)
Covariates	Yes	Yes	Yes	Yes
Observations	402	402	402	402

Notes: ∗ ∗ ∗/ ∗ ∗/∗ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.

These results correspond to the results in columns (1) and (2) of Table 6. That is each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1. The outcome variable is the number of crimes per population of 100,000. Each coefficient-standard error pair corresponds to a separate regression, each with just one of the following main explanatory variables: refugee inflows, EAE capacities, and the number of registered migrants. Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Table A4: Refugee Inflow and Voting Behavior - Different and Separate Migrant Measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: County Allocations Only	AfD Vote Share		Right Wing Vote Share		Right Wing Vote Share (adj.)		Election Turnout	
refugees	0.000	-0.001	0.000	-0.001	0.000	-0.001	-0.001	-0.001
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Observations	402	402	402	402	402	402	402	402
R-squared	0.002	0.374	0.002	0.365	0.001	0.378	0.026	0.076
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
Panel B: EAE Capacity Only	AfD Vote Share		Right Wing Vote Share		Right Wing Vote Share (adj.)		Election Turnout	
EAEcap	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	402	402	402	402	402	402	402	402
R-squared	0.002	0.375	0.002	0.365	0.003	0.378	0.028	0.086
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
Panel C: All Migrants	AfD Vote Share		Right Wing Vote Share		Right Wing Vote Share (adj.)		Election Turnout	
△ Registered Migrants	-0.000	-0.000	0.000	-0.000	0.000	-0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	402	402	402	402	402	402	402	402
R-squared	0.000	0.370	0.000	0.359	0.000	0.369	0.002	0.052
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.
Each column reports coefficients and standard errors from a county level OLS regression. Columns (1) through (8) conduct a First-Differencing analysis as described by equation 1. That is, the difference between the corresponding outcome im the 2017 and 2013 federal election is regressed on our two main explanatory variables (and covariates). Panel A assesses the effect of number of refugees allocated to a county (per 100,000) during the 2014/15 refugee crisis without controls for (state-run) EAE capacities. Panel B assess the effect of the number of (state-run) reception center (EAE) beds in the county (per 100,000) without controlling for number of refugees allocated to a county. Panel C assess the effect of the increase in all registered migrants from the main refugee countries as present in the central registry of foreigners. Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Table A5: Refugee Inflow and Voting Behavior in NRW - - Different and Separate Migrant Measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: County Allocations Only	AfD Vote Share		Right Wing Vote Share		Right Wing Vote Share (adj.)		Election Turnout	
refugees	-0.0003**	-0.0000	-0.0002	0.0000	-0.0005***	-0.0001	0.0001	0.0002**
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)
Observations	396	396	396	396	396	396	396	396
R-squared	0.0114	0.0957	0.0057	0.0869	0.0224	0.1618	0.0066	0.0252
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
Panel B: EAE Capacity Only	AfD Vote Share		Right Wing Vote Share		Right Wing Vote Share (adj.)		Election Turnout	
EAEcap	-0.0001*	-0.0003***	-0.0001*	-0.0003***	-0.0001	-0.0003***	-0.0001	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0001)
Observations	396	396	396	396	396	396	396	396
R-squared	0.0024	0.1080	0.0023	0.0993	0.0025	0.1716	0.0039	0.0180
Covariates	No	Yes	No	Yes	No	Yes	No	Yes

Notes: $***/**/*$ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses.
Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1. That is, the difference between the corresponding outcome in the 2017 and 2013 federal election is regressed on our two main explanatory variables (and covariates). Panel A assesses the effect of number of refugees allocated to a county (per 100,000) during the 2014/15 refugee crisis without controls for (state-run) EAE capacities. Panel B assesses the effect of the number of (state-run) reception center (EAE) beds in the county (per 100,000) without controlling for number of refugees allocated to a county. Panel C assesses the effect of the increase in all registered migrants from the main refugee countries as present in the central registry of foreigners (AZR). Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively.

Table A6: Inflows of Refugees and Change in Crime between 2013 and 2016: Other Crime Categories

	(1)	(2)	(3)	(4)	(5)
	Robbery Mean: 41.97	Agg. Assault Mean: 143.29	Reg. Assault Mean: 449.06	Officer Obstruction Mean: 21.27	Murder Mean: 2.81
refugees	0.0024*	0.0036	0.0012	0.0001	0.0001
	(0.0014)	(0.0027)	(0.0090)	(0.0009)	(0.0004)
EAEcap	0.0039**	0.0067**	0.0031	-0.0001	-0.0004
	(0.0016)	(0.0033)	(0.0078)	(0.0015)	(0.0006)
	(6)	(7)	(8)	(9)	(10)
	Burglary Mean: 140.39	Day-Burglary Mean: 57.63	Car Theft Mean: 36.91	Theft from Cars Mean: 318.06	Property Damage Mean: 722.24
refugees	-0.0003	0.0001	0.0004	0.0059	0.0125
	(0.0054)	(0.0028)	(0.0013)	(0.0077)	(0.0114)
EAEcap	0.0010	-0.0012	-0.0016	-0.0024	0.0134
	(0.0064)	(0.0034)	(0.0027)	(0.0148)	(0.0138)
	(11)	(12)	(13)	(14)	(15)
	Graffiti Mean: 105.18	Fraud Mean: 939.34	Faredodging Mean: 212.57	SexCrimes† Mean: 8.75	Arson† Mean: 23.67
refugees	0.0008	0.0147	0.0109	0.0008	0.0054*
	(0.0059)	(0.0302)	(0.0104)	(0.0007)	(0.0030)
EAEcap	0.0099	-0.0393	-0.0152	-0.0001	-0.0000
	(0.0099)	(0.0298)	(0.0191)	(0.0005)	(0.0017)
Covariates	Yes	Yes	Yes	Yes	Yes
Observations	402	402	402	402	402

Notes: ∗∗∗/∗∗/∗ indicate significance at the 1%/5%/10%-level. Heteroscedasticity robust standard errors in parentheses. These results correspond to the results in columns (1) and (2) and Table 6, but for other crime categories. Each column reports coefficients and standard errors from a county level OLS regression as shown in equation 1. The outcome variable is the number of crimes per population of 100,000. Covariates are all county-specific and include per capita GDP (in €), the youth coefficient, and the shares of the population that are male, foreign, and receiving housing benefits, respectively. † Results for sex crimes and arson stem from cross-sectional analysis of 2016 data.