

# *Essays on the Political Economy of Immigration*

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## Abstract

The thesis presents three essays dealing with political, social and economic aspects of international migration.

In the second chapter (coauthored work with Prof. Lewis Davis, Union College, NY), we revisit the well-established salient relationship between rising immigrant population shares (IPS) and the success of far-right parties in the European countries. In particular, special attention is given to better understanding the cross-country variations in this relationship by considering the country's macroeconomic and macro-cultural characteristics. Our separate consideration of citizens' economic and cultural concerns over immigration is another contribution to the literature as different concerns may suggest different types of policy interventions in mitigating the well-documented impact of immigration. The results suggest that European citizens' economic and cultural opposition to immigration are positively associated with the country's IPS. Additionally, the findings indicate that economic concerns over immigration are more sensitive to the IPS in countries with 1) higher unemployment rates and 2) lower levels of per capita income. The cultural concerns over immigration, however, depend on neither the country's historical religious diversity nor its collectivistic national culture.

Chapters three and four focus on the determinants of immigrants' socio-economic assimilation in the host environment. As Europe was subjected to a number of Islamist terror events since the dawn of the 21st century, assimilation of Islamic immigrants living in the West has come to the forefront of policy discussions. In the third chapter, I exploit the episode of sudden news revelations in 2011 of unprovoked crimes committed by a previously unknown extreme rightwing group National Socialist Underground (NSU) against Turkish immigrants in Germany. I study the impact of these news revelations on targeted minority's social assimilation outcomes. Using the German Socio-economic Panel (SOEP) data, the study offers the first evidence that the 2011 news revelations of NSU crimes increased fears of future xenophobic hostility among the Turkish immigrants. The results further show that the revelations significantly reinforced a feeling of estrangement among Turkish immigrants, who were now less likely to self-identify as Germans and more likely to see themselves as foreigners; they, therefore, tended to bond more strongly with the ethos of their country of origin. The results also demonstrate that Turkish immigrants reported a substantial decrease in their health satisfaction and subjective wellbeing. In conclusion, the findings suggest that the fears of victimhood induced by the NSU revelations have affected social assimilation and the wellbeing of Turkish immigrants living in Germany.

In the fourth chapter (coauthored work with Yue Huang, OVG Magdeburg), we investigate another novel and contemporaneously relevant determinant of immigrants' socio-economic assimilation in the host

society, i.e. new immigration flows. In particular, we present first causal evidence of the impact of the inflows of Middle-Eastern refugees to Germany on the culturally closer Diaspora of existing immigrants from Turkey and Middle-Eastern and North African countries (T-MENA). The sudden and massive inflow of refugees to Europe around the year 2015, dominated by refugees originating from Middle-Eastern countries such as Syria and Iraq, is generally referred to as the European refugee crisis (ERC). With regards to the economic impact of the ERC, first, we find that the T-MENA immigrants in Germany observed a reduction in unemployment in the immediate aftermath of the crisis. We interpret these findings to be consistent with the differential demand shock induced by the refugees' consumption of culturally similar goods and services (e.g. ethnic grocery stores, restaurants serving *halal* food, refugee relief services or *Flüchtlingshilfe*, etc.) on T-MENA immigrants. We further find that starting next year the unemployment effects dissipated, a finding coinciding with refugees' incremental yet delayed entry into the labor market resulting in disproportionately increased labor market competition for T-MENA immigrants. The analysis of the effect heterogeneity suggests that the treatment effects on respondent's unemployment were non-transitory and smaller for T-MENA immigrants with good German skills, whereas, they were larger for first-generation T-MENA immigrants. Our analysis does not yield any results for T-MENA immigrants' weekly hours worked and hourly wages. Second, we study the ERC's impact on T-MENA immigrants' social outcomes, measured in their self-reported social worries (about further immigration, crime development, and xenophobic hostility) and assimilation of the host identity. We find that, although all immigrants in Germany reported increases in their social worries, especially about further immigration to Germany, T-MENA immigrants reported statistically significant smaller increases. Additionally, we find that the unconditional support shown by German nationals towards incoming Middle-Eastern refugees reinforced the belief of German identity among T-MENA immigrants. Finally, we do not find any effects on T-MENA immigrants' subjective wellbeing measured in their satisfaction towards life and health.

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## List of abbreviations

|             |   |
|-------------|---|
| AS          | Asylum seekers  |
| ATT         | average treatment effect on the treated   |
| CC          | Cultural concerns over immigration  |
| CTA         | Common trend assumption   |
| DiD         | Difference-in-differences estimation  |
| EC          | Economic concerns over immigration  |
| ERC         | European refugee crisis   |
| ESS         | European Social Survey  |
| FGI         | First-generation immigrants   |
| FRV         | Far-right voting tendencies   |
| IPS         | Immigrant population share  |
| Log GDP pc  | Logarithm of country's gross domestic product in per capita   |
| MDiD        | matched difference-in-differences estimator   |
| ME refugees | Refugees from Middle-Eastern countries (Syria, Iraq, and Afghanistan)   |
| ME AS       | Asylum seekers from Middle-Eastern countries (Syria, Iraq, and Afghanistan)                                       |
| non-T-MENA  | Immigrants in Germany originating from countries other than Turkey and Middle-Eastern and North African countries |
| NSU         | National Socialist Underground  |
| SGI         | Second-generation immigrants  |
| SOEP        | German Socio-economic Panel   |
| T-MENA      | Immigrants in Germany from Turkey and Middle-Eastern and North African countries                                  |
| UR          | Country's unemployment rate   |



# 1 Introduction

Last few decades have witnessed a dramatic increase in the flows of international migrants to the developed world. Table 1.1 provides the World Bank estimates for the international migrant stock as a percentage of the total population (The World Bank, 2018).<sup>1</sup> Since 1990, the world immigrant population share (IPS) has increased by around 15%. The increase, however, was noted mostly among high-income countries (of around 76%). Low and middle-income countries have, in fact, observed a decline in the IPS largely due to high population growth rates. More relevant for the scope of the thesis, during this period, many European countries more than doubled their IPS, e.g., sextupled in Spain, quadrupled in Finland and in Italy, tripled in Norway, and doubled in Germany and in Denmark. The substantial rise in IPS in Europe did not go unnoticed and had serious political and socio-economic implications for the host countries. Perhaps not so surprisingly, a recent survey of the European population ranks immigration second on the list of gravest issues faced by their countries, after unemployment (Eurobarometer 87, 2017). As international migration is one of the most contentious issues in the globalized world, the thesis overviews the existing literature and presents three essays dealing with political, social and economic aspects of international migration.

A consequence that is intimately associated with rising IPS is that it induces opposition to further immigration among the natives. This opposition stems from citizens' view of the economic and cultural impact of immigration. The literature finds supporting evidence suggesting a positive association between the IPS and citizens' increasing concerns over immigration (Quillian, 1995; Dustmann and Preston, 2001; Schneider, 2008; Meuleman et al., 2009). Increasing immigration stocks are also shown to have a causal relationship with far-right voting in a number of European countries (Halla et al., 2017 for Austria; Dustmann et al., 2018 and Harmon, 2018 for Denmark; Otto and Steinhardt, 2014 for the city of Hamburg, Germany; Sekeris and Vasilakis, 2016 for Greece; Barone et al., 2016 for Italy; Brunner and Kuhn, 2014 for Switzerland; Becker and Fetzer, 2016 for the UK). Therefore, a deeper analysis of citizens' various concerns over immigration is warranted. Although a number of papers investigate the relationship of the IPS-anti-immigration views, the analysis of cross-country variations in citizens' opposition to immigration has not been undertaken. That is, beyond distinct levels of the IPS across countries, we do not definitively understand other country characteristics that moderate this relationship. To fill this gap in the literature, the second chapter of the thesis (with Lewis Davis, Union College, NY) descriptively underlines the

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<sup>1</sup> World Bank (2018) defines an international migrant as a person born in any other country than the country of current residence which also includes refugees. The international migrant stock (as % of population) is then the total number of international migrants residing in a country as a fraction of its total population. It is noteworthy that the definition does not include second-generation immigrants who are integral part of the empirical analysis conducted in this thesis.

macroeconomic and macro-cultural characteristics of European countries that moderate the relationship of the country's IPS and citizens' economic and cultural concerns over immigration (*see* chapter 1).

In this globalized world, immigration patterns are neither bound by geographical distances between the home and host countries nor is any history of earlier immigration between the countries needed. The prospective migrants can migrate to their preferred destination countries with relative ease and fewer restrictions. Consequently, unlike most other eras of human history, immigrants to the West nowadays originate from different parts of the world. After their immigration, different immigrant groups then follow distinct paths to assimilate in the host environment. For example, immigrants from countries which are relatively richer and share cultural closeness with the Western host country may assimilate at higher rates compared to immigrant groups originating from relatively poor and culturally distant countries. The socio-economic assimilation rates are shown to be particularly lower among the Islamic immigrants dwelling in the West (Algan et al., 2012 for France; Constant et al., 2006 and Constant et al., 2012 for Germany; Georgiadis and Manning, 2012 for the UK).<sup>2</sup> The interest in investigating the obstacles to their assimilation was deemed urgent in the aftermath of a number of Islamist terror attacks in the Western countries (e.g. 7/7/2005 bombings in London, 13/11/2015 Paris attacks, etc.) as notably the perpetrators were natives with Islamic background residing in the targeted countries. The third and fourth chapters of the thesis contribute to the literature by providing causal investigations introducing two novel determinants of Islamic immigrants' economic and social assimilation in Germany.

## **Chapter 2: Does the Response to Immigration Differ Across Countries?**

The second chapter of the thesis emphasizes the potential of international migration to alter the political equilibrium in host countries by attracting voters towards far-right political parties. Table 1.2 presents vote shares of carefully selected European far-right political parties in national parliamentary elections for the period 2002-2017.<sup>3</sup> Our focus on far-right parties stems from the understanding that these parties are known to hold anti-immigration views. The main motivation for our interest is provided by the observation that, with the rising IPS noted earlier, far-right parties have secured increasing vote shares (>15%) in a number of European democracies, e.g., FPÖ in Austria, DF in Denmark, Finns Party in Finland, FRP in Norway, *Jobbik* in Hungary. In many countries, these parties have formed (or helped form) national governments, e.g. Austria, Italy, Hungary, Norway. Particularly important for this chapter is that far-right parties not only

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<sup>2</sup> The thesis refers to immigrants originating from predominantly Islamic countries or those belonging to Islamic religions as Islamic immigrants.

<sup>3</sup> For the scope of this thesis, a far-right party is defined as a political party with an anti-immigration rhetoric. Table 1.3 lists European far-right parties based on work by Ivarsflaten (2006), Rydgren (2008), and Mudde (2012, 2013). The list includes all the noticeably large far-right parties existing in 2000s. Another criteria used is their inclusion in the European Social Survey (ESS) survey questionnaire.

speak to citizens' economic concerns over immigration but frequently stress on cultural and religious differences between immigrants and natives. Their success, therefore, provides supporting evidence that European citizens are indeed concerned about the way immigration policy is managed in their countries. This calls for a need aiming at a deeper understanding of citizens' various concerns over immigration.

Better understanding of citizens' various concerns over immigration is also important as the existing literature shows that natives' hostile attitudes can influence immigration policy to deter future immigration flows (Facchini and Mayda, 2008; Facchini et al., 2011) or can make a country's social environment less hospitable to immigrants, especially for highly educated immigrants (Knabe et al., 2013). The second chapter revisits and then extends the well-documented salient relationship between IPS and European citizen's concerns over immigration. Notably, the chapter contributes to the literature by giving special attention to European respondents' economic and cultural concerns over immigration, the two largely ignored variables from the European Social Survey (ESS).

Prior to listing the main findings of the second chapter, we descriptively show whether there indeed is a relationship between the countries' IPS and the success of the far-right parties in national elections in Europe.<sup>4</sup> Using the first seven waves of the ESS data (2002-2014) on 14 European countries, we estimate probit regressions on citizens' decision to vote for a far-right party in national elections.<sup>5</sup> Figure 1.1 shows the plot representing a strong positive association between the IPS and European citizens' far-right voting tendencies (FRV).<sup>6</sup> Thereafter, we ask how citizens' economic and/or cultural concerns over immigration are associated with the FRV. The results presented in columns (1)-(3) of Table 1.4 indicate that citizens' both economic as well as cultural concerns over immigration are positively associated with the FRV. Interestingly, in column (3), we observe that cultural concerns appear to play a greater role than economic concerns. In terms of magnitudes, the marginal effects associated with cultural concerns (0.027) are larger than that with economic concerns (0.019), suggesting the pertinence of citizens' cultural concerns in their FRV. These findings reiterate the need to give equal attention to citizens' economic and cultural concerns over immigration in studies aimed at investigating the topic of immigration.

Now, let's turn our attention to the content of the second chapter. The chapter begins by reviewing the theoretical underpinnings that help us understand citizens' response to immigration. The dominant school of thought, the *group threat theory*, explains that the native's opposition to immigration can be understood as their response to a perceived threat that immigration poses on their economic interests and social position (Blumer, 1958; Blalock, 1967). Unsurprisingly, a major strand of this research focuses on the *economic*

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<sup>4</sup> This portion of the thesis is borrowed from the published research report Davis and Deole (2018).

<sup>5</sup> For the detailed presentation of the data and the estimation strategy, please see Davis and Deole (2018).

<sup>6</sup> In Davis and Deole (2018), we further investigate whether the IPS-FRV relationship differs systematically across citizens' various characteristics (e.g. education, employment, rural residence, and religious belonging) and across pertinent country characteristics (e.g. macroeconomic and macro-cultural characteristics).

*threat* of immigration. This threat includes the impact of immigration on natives' labor market outcomes (increased competition for jobs, reduced wages, etc.) and on the host country's welfare system. A vast body of economics research is also devoted to studying citizens' economic concerns over immigration (Scheve and Slaughter, 2001; Dustmann and Preston, 2007; Facchini and Mayda, 2009; Senik et al., 2009; Hainmueller and Hiscox 2011; Helbling and Kriesi, 2014; Jaime-Castillo et al., 2016). This literature highlights that citizens indeed perceive that immigration is associated with reduced wages, lower employment prospects, and burden on the country's welfare-state, etc.

But are citizens' economic concerns over immigration really justified? Ample amount of economics literature is devoted to answering this question. Kerr and Kerr (2011) present a detailed survey of this research and provide three main conclusions. First, the authors find on average weak adverse effects of immigration for native wages and employment prospects. They, however, add that the effect sizes are much larger for the less-educated natives and for the earlier immigrant cohorts. In other words, immigration is shown to pose an economic threat for the low-educated natives by disproportionately and negatively affecting their wages and employment prospects.<sup>7</sup> A notable study by D'Amuri and Peri (2014), however, puts these findings in a positive light. They study labor markets of fifteen Western European economies for the period 1996-2010 and find supporting evidence that immigrants indeed take away manual/less-skilled jobs from natives. They, however, add that these job losses cause a job upgrade for the natives, i.e. higher immigration pushes native workers to move to jobs requiring a relatively higher level of complexity. Such jobs are generally high-paying and high-skilled and thus, immigration is interpreted to have a positive externality for the native workers.

The second conclusion made by Kerr and Kerr questions the general belief that immigrants use more welfare assistance than natives. They find that this belief is not uniformly confirmed by the existing literature and that there are large cross-country variations in immigrants' use of welfare depending on cross-country differences in immigration types (skilled vs. less skilled, young vs. old, married vs. single, etc.) and institutions. In other words, the cross-country differences in the immigrant/native gap in welfare use depend on the host country's demographic structure and the age/skill structure of arriving immigrants. For example, less-skilled immigrants with on average lower employability in the host labor market may depend more on welfare than natives. Therefore, countries receiving a high share of less-skilled immigrants can report a higher immigrant/native gap in welfare use. In contrast, as immigrants to the Western countries are on

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<sup>7</sup> The literature studying the impact of skilled immigration is mostly dominated by the research that uses the US data. Their findings overwhelmingly report positive effects. For example, Peri et al. (2015) analyze the impact of the H-1B visa program on the economic environment in 219 US cities for the period 1990-2010. Their main findings suggest that H-1B-driven immigration of STEM (Science, Technology, Engineering, and Mathematics) workers were associated with wage increases for both STEM and non-STEM college-educated natives. For non-college educated natives, they find relatively smaller but significant wage increases and no employment effects. Stuen et al. (2012) and Hunt and Gauthier-Loiselle (2010) study the impact of immigration of international graduate students to the US on country's research output and patents per capita and find substantial positive effects.



average shown to be younger than the natives, their welfare use may be, in general, lower than the aging native population.<sup>8</sup>

Finally, the existing literature studies the fiscal impact of international immigration by asking whether immigrants' burden on the host country's social welfare, education, and health care systems is more than their tax contributions. Rowthorn (2008) underlines the difficulties in conducting fiscal burden calculations by emphasizing that the estimates vary substantially on the basis of the choices of assumptions, econometric methods, discounting techniques, and data. His estimates, nevertheless, suggest that the net fiscal impact of immigration broadly falls within a range of  $\pm 1\%$  of the host country's GDP.<sup>9</sup> Kerr and Kerr (2011, pp. 18-21) also refer to Rowthorn's estimates and conclude that the size of the fiscal impact of immigration is rather small.

A relatively recent study by Razin and Wahba (2015) demonstrates how immigration types are important considerations in understanding immigrants' distinct welfare use and their fiscal impact on European countries. They consider the following two immigration regimes: 1) free-migration regime (immigration from within EU countries) vs. restricted-migration regime (immigration from outside EU countries), 2) and the skill-composition of immigrants, i.e. high vs. low-skilled immigrants. Using data from 16 West-European countries, they investigate whether the host country's welfare state generosity attract a certain type of immigrants more than others in 16 West-European countries. They find that, in the free-migration regime, the generosity of the country's welfare system attracts unskilled immigrants and deters skilled immigrants. In the restricted regime, they show that native voters internalize the fiscal impact of unskilled immigrants from outside EU countries by increasingly preferring skilled immigrants over unskilled immigrants.

In conclusion, the aforementioned research finds that immigration in European countries disproportionately impacts the labor market outcomes of the low-educated natives. Although these newly unemployed low-educated natives are shown to observe a job upgrade afterward, the findings suggesting their adversely affected labor market outcomes provide some justification for their heightened economic concerns over immigration. However, Hainmueller and Hiscox (2011) warn that these findings cannot be understood as supporting evidence for labor market competition hypothesis as they show that less-educated European natives oppose all types of immigration (skilled as well as unskilled immigration) regardless of the labor

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<sup>8</sup> According to the Federal Statistical Office of Germany (2017a), the average age of arriving refugees in Germany in the year 2015 was 29 years whereas for German citizens it was 44 years (cited by Manthei and Raffelhüschen 2018, p. 447).

<sup>9</sup> A very recent study by Manthei and Raffelhüschen (2018) uses German population projections data and finds that migration causes state's assets to deplete and affects the social insurances system. Their estimates for per capita levels suggest that fiscal adjustments needed to payoff all liabilities for the social insurance system range between +0.34 to +0.42 percentage points.

market impact of immigration.<sup>10 11</sup> Additionally, they show that respondents with higher education and occupation skills favor all types of immigration, even that of skilled immigrants. Therefore, they conclude that the relationship between education and views about immigration has less to do with competition for jobs, but that the role of education is more non-economic in nature. In their view, education fosters values and beliefs that place greater value on cultural diversity and enforce more positive views on the economic impact of immigration which explains more favorable views towards immigration among the highly educated. Despite the lack of conclusive evidence on the fiscal impact of immigration, labor market effects of immigration for the less-educated European citizens can be addressed. One way of doing so is to encourage the role of skills in immigration selection procedures, i.e., a pan-European skill-based system of immigration can be implemented similar to that in the US, Australia, and Canada.

Next, let's turn our attention toward citizens' cultural concerns over immigration. The *cultural perspective hypothesis*, another major strand of group threat theory, can help us discuss the cultural origins of citizens' anti-immigration sentiments. As per Vallas et al. (2009, p. 202), this strand attributes an independent causal power to natives' *normative* orientations, such as nationalism (Quillian, 1995; Mayda, 2006; Sides and Citrin, 2007), racism or ethnocentrism (Quillian, 1995; Citrin et al., 1997; Dustmann and Preston, 2007), parochialism (Schneider, 2008; Vallas et al., 2009), language (Chandler and Tsai, 2001), religious sectarianism (Facchini et al., 2013), or concerns over immigrant's work ethic (Helbling and Kriesi 2014) as determinants of their opposition to immigration. In other words, natives may be more opposed to immigrants who do not share these normative orientations but may welcome other immigrants. In contrast, it may also be that larger initial IPS in a country increases the possibility for its citizens to come in contact with the out-group and hence, decreases their concerns over immigration. This sub-strand of group threat theory is sometimes referred to as the *contact hypothesis*. There is, however, weak support for contact hypothesis in the existing literature. For example, Jolly and DiGiusto (2014) find evidence supporting the contact hypothesis for France, whereas, Vallas et al. (2009) do not find conclusive evidence.<sup>12</sup>

The second chapter revisits the aforementioned theoretical strands by investigating the relationship between the IPS and citizens' economic and cultural concerns over immigration. The dataset used for this empirical exercise originates from the European Social Survey (ESS, 2002-2010) and comprises information on 93,539 individuals from 24 European countries. Our investigation reports evidence supporting Blalock's

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<sup>10</sup> Scheve and Slaughter (2001) use the US data and show that less-educated respondents prefer a more restrictive immigration policy.

<sup>11</sup> Mayda (2006), for example, uses the data from 22 developed (including the European countries, US, Canada, etc) and 44 developing countries and find that the respondents with higher education levels are on average pro-immigration.

<sup>12</sup> Vallas et al. (2009) use *2007 Virginia Survey of Anti-Immigrant Sentiment* and find supporting evidence for the contact hypothesis on regional level but opposite results on individual level. In words, on the regional level, they find that anti-immigrant sentiments are higher in regions that did not observe substantial immigration flows, and therefore, their residents had lower contact with immigrants. On the individual level, however, they find that respondents who report to have frequent interactions with immigrants hold higher levels of anti-immigrant attitudes.

(1967) salience hypothesis. That is, we find that European citizens' economic and cultural opposition to immigration is indeed increasing in the country's IPS. We also note that this relationship is linear and that countries with higher initial IPS do not show a diminishing response to increasing IPS. Thereafter, we study the role of the country's macroeconomic conditions and national cultures in mediating the salient relationship between IPS and citizen's concerns over immigration. Main results indicate that economic concerns over immigration are more sensitive to the IPS in countries with 1) higher unemployment rates and 2) lower levels of per capita income. On the other hand, with regards to macro-cultural channels, the results find that cultural concerns over immigration depend neither on the country's historical religious diversity (denoted by lower value of the *Herfindahl index*, a measure developed by McCleary and Barro, 2006) nor its collectivistic national culture (denoted by country's higher ranking on a measure of individualism developed by Hofstede, 2001). These findings suggest caution in extrapolating results regarding attitudes toward immigration across countries or periods with different macroeconomic conditions.

### **Immigrants' socio-economic assimilation in the host environment**

Next the thesis ventures into understanding the determinants of immigrants' socio-economic assimilation in the host environment. In particular, we focus on the Islamic immigrants living in the West as the existing research shows that they are among the least assimilated immigrant groups (Algan et al., 2012; Constant et al., 2006 and Constant et al., 2012; Georgiadis and Manning, 2012).<sup>13</sup> Immigrants' socio-economic assimilation in the host country matters as it has been shown to be important for their general wellbeing. For example, Angelini et al. (2015) show that, in addition to immigrants' economic characteristics (income and employment), a number of noneconomic characteristics play a key role in their subjective wellbeing. These non-economic factors include being married, the host country's language proficiency and their assimilation of the host-identity. They further show that the relevance of noneconomic determinants of subjective wellbeing is crucial for immigrants with a long stay in the host country and for second-generation immigrants. In other words, immigrants are shown to achieve higher subjective wellbeing if they smoothly assimilate economic as well as noneconomic characteristics as they spend more time in the host environment.

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<sup>13</sup> This literature assumes independent explanatory power to respondent's religious belonging and ethnic identity in explaining the respondent's economic and social behaviour in the host environment. Therefore, the reasons for *why* Islamic immigrants are among the least assimilated immigrant groups in the West are not answered beyond their religious belonging and ethnic identity.

An emerging strand finds that Islamist terror events further deteriorate the economic and social assimilation of the Muslims living in the targeted countries.<sup>14</sup> As per the research studying the economic outcomes (Dávila and Mora, 2005; Kaushal et al., 2007; Rabby and Rodgers III, 2011; Wang, 2016; Åslund and Rooth, 2005; Braakmann, 2007; Rabby and Rodgers III, 2010; Cornelissen and Jirjahn, 2012), every time an Islamist terrorists' event occurs, a backlash is induced against Muslim residents of the society. This backlash takes the form of increased labor market discrimination against Muslims which in turn negatively affects their labor market outcomes, such as hourly wages, hours worked, and employment prospects. The research devoted to investigating the impact of 9/11 terrorists' attacks in the US on the labor market outcomes of American Muslims finds evidence supporting negative economic effects.<sup>15</sup> The literature studying the European data, however, finds mixed evidence.<sup>16</sup>

According to the social assimilation literature on the topic (Gould and Klor, 2016; Haddad, 2007; Elsayed and de Grip, 2017), though not as extensive, the backlash induced in the aftermath of Islamist terror events increases the social assimilation costs for the Islamic immigrants and thus, reduces the rate at which they socially assimilate into the host environment. The literature is uniformly supportive of the social effects of Islamist terror attacks on Islamic immigrants in the West. Besides Islamist terror attacks, existing literature reports other determinants of immigrant's assimilation in the host country. Constant et al. (2006) study German data to show that immigrant's religious belonging is an important consideration, that is, they find that Christian immigrants adapt more easily to the German society than Muslim immigrants. Even among Muslim immigrants, they find that females immigrants, immigrants who entered Germany at a relatively older age and who attended schooling in their home country are the least assimilated into the host culture.

The next two chapters contribute to the literature by introducing two novel determinants of Islamic immigrants' assimilation in the host country. The third chapter revisits the causal impact of terror events on the social assimilation outcomes of the Islamic immigrants living in Germany. The chapter contributes to the literature by studying the impact of unprovoked right-wing violence against Islamic minorities on their

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<sup>14</sup> The literature also focuses on the impact of terror attacks on natives. Main findings suggest that these events induced racial prejudice and political conservatism (Echebarria-Echabe & Fernández-Guede, 2006), and generated anti-immigration views (Schüller, 2016) and support for far-right political parties (Berrebi and Klor, 2008) among natives. Additionally, Schüller (2016) shows that the German residents were less worried about xenophobic hostility in their surrounding in the aftermath of 9/11 attacks in the US.

<sup>15</sup> For example, Dávila and Mora (2005) and Kaushal et al. (2007) document a decline in the earnings of American Muslims between 2000 and 2002. Rabby and Rodgers III (2011) show that American Muslims recorded a relative decrease in their employment and hours worked post-9/11. Wang (2016) studies self-employment outcomes and finds that 9/11 attacks impacted American Muslims' entry into self-employment; however, she neither finds any evidence of the impact of 9/11 attacks on Muslims exit from self-employment nor on their earnings.

<sup>16</sup> For example, Åslund and Rooth (2005) and Braakmann (2007) investigate the impact of 9/11 attacks on the employment probability of Arab or Middle Eastern immigrants in Sweden and Germany, respectively, and find no effect. In contrast, Cornelissen and Jirjahn (2012) find a negative impact on hourly wages of low-skilled Muslim males employed in small-sized and medium-sized firms in Germany. Rabby and Rodgers III (2010) find a weak association between the 9/11 terrorist attacks and a drop in the employment of very young male immigrants from Muslim majority countries to the U.K.

social assimilation outcomes. The fourth chapter investigates another contemporaneously relevant determinant of immigrants' welfare in the host society, i.e. new immigration flows. In particular, the chapter presents the first causal evidence of Middle-Eastern refugee inflows to Germany on the economic and social outcomes of the culturally closer existing Diaspora of immigrants from Turkey and Middle-Eastern and North African (T-MENA hereafter) countries.

### **Chapter 3: Right-wing terror and immigrants' assimilation in Germany<sup>17</sup>**

The seminal paper investigating the impact of Islamist terror attacks on the social outcomes of Muslims living in the West is Gould and Klor (2016). The authors consider the impact of 9/11 attacks on the social assimilation of Muslims in the US and find that Muslims living in states with the sharpest increase in hate crimes exhibit: greater chances of marrying within their own ethnic group, higher fertility, lower female labor force participation, and lower English proficiency. Noticeably, however, this chapter, along with others in the literature, focuses on the impact of Islamist terror events. This consideration rather suggests an indirect transmission of terror events and neglects the impact of unprovoked xenophobic violence directed at Islamic immigrants and its effects on their social outcomes. The third chapter fills this space in the existing literature by underlining the pertinence of anti-immigrant violence for Islamic immigrants' social assimilation in the host culture.

In particular, the analysis exploits the exogenous variation induced by the accidental revelation in the year 2011 of past crimes committed by a previously unknown extreme rightwing group National Socialist Underground (NSU) in Germany. The NSU had targeted and killed 8 residents of Turkish origin in the early 2000s and was also implicated in two bombings in the city of Cologne (one in an Iranian grocery store and another in the Turkish dominated neighborhood of the city). Post-NSU event press coverage heavily criticized the investigating authorities for their negligence and alleged *institutional racism* on their part while conducting the investigations of past murders. In particular, it highlighted the investigating authorities' inabilities to name the perpetrators sooner (the last murder had occurred in 2007), as well as their incessant suspicions of the people close to victims and of the Turkish mafia, and years of delayed justice (Brandt et al., 2011; BBC News, 2017). The chapter conducts an empirical analysis of the causal impact of the 2011 revelations on the targeted group's worries and social assimilation outcomes.

For the theoretical reasoning of the expected results, the chapter refers to the seminal literature suggesting the role of media representation of an event (in terms of its quantity and quality) in framing public opinions (Heath, 1984; Iyengar and Simon, 1993). In the case of the NSU revelations, evidently, the news content not only constituted episodic information involving the stories of authorities' harassment of friends and

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<sup>17</sup> This chapter is a modified version of the original article Deole (2019).

families of the victims but also made a broader assertion of the historical maltreatment of Turkish minorities residing in Germany.<sup>18</sup> Consequently, we expect that the 2011 NSU news revelations were internalized distinctly by the targeted group i.e. Turkish immigrants than other immigrants.

For the empirical analysis, we use the German Socio-economic Panel (SOEP) data. The average treatment effect on the treated (ATT) is estimated using a two-step estimator, the matched difference-in-differences estimator (MDiD). In the first step, using the propensity score matching technique, we find the control group observations that are similar to the treatment group observations with respect to a number of pre-treatment characteristics. In the second step, the difference-in-differences (DiD) regressions are implemented. The treated group is assumed to be Turkish immigrants and the control group comprises of non-Turkish immigrants in Germany.

Following the emerging social assimilation literature initiated with Gould and Klor (2016), we ask the following two research questions. First, we ask whether the 2011 revelations impact the targeted group's worries about future hostility directed at them. The respondents' subjective worries about perceived xenophobic hostility are captured by the survey question asking, "Are you worried about hostility to foreigners?" The response to this question ranges from 1 (not concerned at all) to 3 (very much concerned). Second, we ask whether the news revelations present an obstacle to the targeted group's social assimilation into German culture. To capture the respondent's social assimilation into the host culture, we consider the survey question that determines how strongly the respondent feels German or feels foreigner dwelling in Germany. The responses to these questions range from 1 (not at all) to 5 (very much). As per Angelini et al. (2015), these variables represent a direct measure of respondents' self-reported assimilation into the host culture and are strongly associated with individuals' subjective well-being.

The empirical investigation offers the first evidence that the 2011 revelations resulted in an increase in perceived fears of xenophobic hostility among NSU's targeted groups. In contrast, we find that the 2011 revelations had no significant effect on immigrants' worries about general crime development in Germany. That is, Turkish immigrants became more fearful of hostility directed at them rather than the general crime level in their surroundings after the 2011 revelations. Furthermore, the results find that the fears of hostility and victimhood induced by these past crimes raised assimilation costs and caused deterioration of assimilation outcomes of the targeted minorities.<sup>19</sup> In terms of magnitude, the decrease in self-identification

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<sup>18</sup> The data on respondent's preferred newspaper is not available for the analysis. Media's coverage of the event may differ on the basis of newspaper's view of the event and induce differential treatment effects on the treated group. For example, *der Spiegel* and *Frankfurter Allgemeine Zeitung* can be expected to fall on different spectrum of the left-right political scale which in return can influence their coverage of the NSU revelations. This concern calls for future investigation focusing on newspaper's use of keywords while covering this issue and the treatment effects.

<sup>19</sup> In the pre-matching and pre-treatment sample, the mean *self-identification as German* for Turkish immigrants was 2.626 and that for non-Turkish immigrants was 3.511. These means suggest that Turkish immigrants are indeed less assimilated than non-Turkish immigrants in Germany. A further relative reduction in their self-identification as German indicates widening of this gap.

as German for Turkish immigrants (interaction coefficient = -0.454, s.e. = 0.139) is at about 17 % of the mean and 41 % of one within-individual standard deviation in the estimated sample. In comparative terms, this reduction is crudely equivalent to the coefficient if respondent is disabled (coefficient = -0.460, s.e. = 0.188), two-thirds of the coefficient if the respondent is not the owner of the house he/she lives in (coefficient = 0.688, s.e. = 0.213), and 1.5 times the coefficient if the respondent reports being not very good at oral German language proficiency (coefficient = 0.299, s.e. = 0.177). For the sample considered, the coefficients on pertinent economic characteristics, such as education (coefficient = 0.023, s.e. = 0.099) and working experience (coefficient = -0.022, s.e. = 0.058), and longer stay of immigration (coefficient = 0.388, s.e. = 0.32) are not statistically significant. The results also demonstrate that Turkish immigrants reported a substantial decrease in their health satisfaction and subjective wellbeing.

#### **Chapter 4: How new immigration flows affect existing immigrants?**

Ample amount of existing economics literature investigates the impact of immigration.<sup>20</sup> This literature studies the impact of immigration on natives' labor market outcomes, the standard of living (neighborhood crime rate, the housing market, the health, education, etc.), and political outcomes. On the basis of outcomes, this literature can be classified as follows: labor market outcomes (Borjas, 2017; Card, 1990; Ceritoglu et al., 2017; Jaeger et al., 2018; Peri and Yasenov, 2019), crime rate (Bell et al., 2013; Bianchi et al., 2012; Butcher and Piehl, 1998; Dehos, 2017; Mastrobuoni and Pinotti, 2011; Spenkuch, 2014), the housing market (Kürschner Rauck and Kvasnicka, 2018), education (Brunello and Rocco, 2013; Brunello et al., 2017; Hunt, 2017), health (Escarce and Rocco, 2018), political outcomes (Harmon, 2018) etc. The impact of new immigration flows on existing immigrants is, however, often neglected or sidelined.<sup>21</sup> In this globalized world, this is an important concern as IPS in many Western countries has already reached to higher than 10 percent. The issue is further complicated when we consider the socio-economic assimilation outcomes of second- and third-generation migrants dwelling in the host country. The fourth chapter, a coauthored work with Yue Huang (OVG Magdeburg), contributes to the literature by comprehensively answering this question. In particular, we study the impact of Middle-Eastern refugee inflows (particularly from Syria, Iraq, and Afghanistan) on the culturally closer Diaspora of existing immigrants in Germany, i.e. immigrants from Turkey and Middle-Eastern and North African countries (T-MENA).

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<sup>20</sup> See Kerr and Kerr (2011) for a review of the literature investigating the economic impact of immigration which, contrary to popular wisdom, put immigration broadly in a positive light.

<sup>21</sup> A recent working paper by Malaeb and Wahba (2018) studies the economic impact of the influx of Syrian refugees to Jordan on the existing immigrants in Jordan. They find that the economic immigrants in Jordan were likely to work in the informal sector, worked fewer hours and earned lower total wages after the refugee crisis. They show that the impact of refugee influx was felt more by the economic migrants in Jordan than natives.

After German Chancellor Angela Merkel's announcement about suspending the Dublin Regulation on the 25th August 2015, among others, the refugees fleeing devastating Syrian civil war were formally allowed to enter Europe.<sup>22</sup> This policy change is often referred to as Germany's Open Border Policy. In response, around 890,000 asylum seekers entered Germany in the year 2015 (BAMF, 2019).<sup>23</sup> Among the asylum applications filed in 2016/17, 36.9% first-time applicants originated from Syria, 13.3% originated from Iraq and 17.6% originated from Afghanistan, together constituting the largest group among the applications filed (BAMF, 2019). Upon arrival, asylum seekers were required to report to a number of dedicated state organizations and afterward, they were distributed to different federal states in Germany following the *Königstein Key* criteria. Once they are granted refugee status, they were provided with cash allowances to cover monthly expenses while rent and health insurance were covered by the state. Their consumption may induce an immediate demand shock to the economy overall. In particular, we expect differential demand effects for existing T-MENA immigrants given refugees' preference for the consumption of culturally similar goods and services, e.g. ethnic groceries, restaurants serving *halal* food, etc. Additionally, upon obtaining the refugee status, they could freely enter the labor market and compete for jobs with similarly skilled workers. But it could take anywhere between a few months to a year to complete the asylum application process. Moreover, refugees spent a long time in language courses to achieve a certain proficiency in the German language before being seriously considered for formal jobs. This might delay the labor market effects associated with supply shock induced by the 2015 European refugee crisis (ERC). Our analysis gives comprehensive consideration to the aforementioned labor supply and labor demand side of the market and studies the average differences in the treatment effects for the T-MENA immigrants.

T-MENA immigrants have a long history of residence in Germany. Especially, the Turkish immigrants, one of the largest Diaspora of immigrants, arrived in Germany to contribute to the post-WW II reconstruction efforts of the country. Residents of other T-MENA countries that were allowed during this period were Morocco and Tunisia, though in lesser numbers. Unlike other immigrants in Germany, T-MENA immigrants are culturally closer to the arriving Middle-Eastern refugees due to geographical, historical and religious connections. Additionally, both these groups are shown to have among the lowest education and professional skills as compared to other immigrant groups and German natives.<sup>24</sup> Therefore, we expect that

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<sup>22</sup> In addition to Syria, the residents of following two countries were also allowed to enter as refugees: Afghanistan and Eritrea.

<sup>23</sup> According to the statistics provided by BAMF (2019), in the year 2015, the net migration gain (calculated after subtracting the number of emigrants to these countries from the number of immigrants from these countries in a given year) for Germany from Syria (316,732), Iraq (67,345) and Afghanistan (89,931) amounted to total of 474,008 asylum seekers. This number dropped in years 2016 (Total=282,151; Syria=153,239; Iraq=61,409; Afghanistan=67,503) and 2017 (Total=76,942; Syria=49,123; Iraq=20,800; Afghanistan=7,019). A vast majority of the immigrants originating from these countries were asylum seekers.

<sup>24</sup> Brücker (2018) reports that arriving refugees' lower levels of general and vocational education qualifications is a concern for their integration into the German labor markets. Constant et al. (2012, p.79), for example, shows that Turkish immigrants, which constitutes the majority among the T-MENA group, report the lowest levels of education in Germany.



T-MENA immigrants are affected by the sudden and exogenous inflows of Middle-Eastern refugees in the aftermath of the ERC in Germany. By assuming non-T-MENA immigrants in Germany as the suitable control group for our experimental set-up, we apply difference-in-differences regressions to study the economic and social effects of the 2015 ERC on existing T-MENA immigrants. It is worth noting that the control group can also be affected by the ERC. If the direction of the treatment effect for the control group is assumed to be the same as for the treated group, then we can interpret our results as the lower-bound of the true effect. Unfortunately, the direction of the effects on the control group is unclear. To address this issue, we do the following. First, we interpret the estimated effects as the average differences in treatment effects for T-MENA and non-T-MENA immigrants. And second, we consider German natives as another control group to comparatively put our findings on firmer ground.

Using German SOEP data, our results are broadly threefold. First, we report that the existing T-MENA immigrants reported an immediate reduction in their unemployment after the ERC. We interpret these findings to be consistent with the demand shock differentially induced by the 2015 ERC on T-MENA immigrants. We further find that starting next year the unemployment effects dissipated which we interpret to be consistent with the delayed and incremental labor market integration of incoming refugees. We further find that the treatment effects on respondent's unemployment were non-transitory and smaller for T-MENA immigrants with good German skills, whereas, they were larger for first-generation T-MENA immigrants. We do not report any effects on their hourly wages and weekly hours.

Second, due to cultural similarities of T-MENA immigrants with the arriving refugees, we also study the impact of the ERC on T-MENA immigrants' social worries and assimilation outcomes. We demonstrate that, although all immigrants reported increases in their worries about immigration, crime and xenophobic hostility in the aftermath of the 2015 ERC, T-MENA immigrants reported smaller increases in these worries. Additionally, our analysis reports that T-MENA immigrants' assimilation of the host identity was not affected by the ERC, whereas we find that they increased their bonding with the home culture. We interpret the later results as follows: due to a sudden and massive increase of culturally similar population in the country, existing T-MENA immigrants now feel more connected with the home country's culture. Finally, we find no impact of the ERC on T-MENA immigrants' wellbeing outcomes (measured in their self-reported satisfaction with their life and health).

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## Appendix

**Table 1.1: International migrant stocks in the globalized world**  
(in % of the total population)

| Year   | (1)<br>1990 | (2)<br>1995 | (3)<br>2000 | (4)<br>2005 | (5)<br>2010 | (6)<br>2015 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>World</b>                                   | 2.891       | 2.823       | 2.829       | 2.942       | 3.205       | 3.338       |
| <b>a. World regions based on income levels</b> |             |             |             |             |             |             |
| High-income                                    | 7.699       | 8.563       | 9.594       | 10.960      | 12.760      | 13.585      |
| Middle-income                                  | 1.720       | 1.494       | 1.385       | 1.308       | 1.343       | 1.405       |
| Low-income                                     | 2.716       | 2.531       | 1.849       | 1.588       | 1.353       | 1.468       |
| <b>b. Different high-income regions</b>        |             |             |             |             |             |             |
| European Union                                 | 5.680       | 6.317       | 7.065       | 8.669       | 10.245      | 10.725      |
| United Kingdom                                 | 6.392       | 7.176       | 8.035       | 9.842       | 12.125      | 13.201      |
| United States                                  | 9.196       | 10.685      | 12.306      | 13.257      | 14.258      | 14.491      |
| <b>c. Continental European countries</b>       |             |             |             |             |             |             |
| Austria  | 10.293      | 11.224      | 12.378      | 13.798      | 15.205      | 17.466      |
| Belgium  | 8.935       | 8.712       | 8.311       | 8.246       | 9.633       | 12.284      |
| Germany  | 7.518       | 9.146       | 10.981      | 12.676      | 14.429      | 14.879      |
| Spain  | 2.096       | 2.565       | 4.067       | 9.366       | 13.476      | 12.690      |
| France   | 10.356      | 10.456      | 10.573      | 11.002      | 11.430      | 12.088      |
| Italy  | 2.505       | 3.107       | 3.713       | 6.742       | 9.713       | 9.681       |
| Netherlands                                    | 7.927       | 8.713       | 9.792       | 10.630      | 11.018      | 11.696      |
| Switzerland                                    | 20.862      | 21.075      | 21.921      | 24.369      | 26.501      | 29.387      |
| <b>d. Scandinavian countries</b>               |             |             |             |             |             |             |
| Denmark  | 4.575       | 5.793       | 6.950       | 8.129       | 9.183       | 10.099      |
| Finland  | 1.268       | 1.952       | 2.631       | 3.663       | 4.623       | 5.740       |
| Norway   | 4.542       | 5.351       | 6.511       | 7.810       | 10.770      | 14.236      |
| Sweden   | 9.216       | 10.604      | 11.314      | 12.467      | 14.761      | 16.768      |

Data source: World development indicators (2018).



**Table 1.2: Vote share of far-right parties in National parliamentary elections  
(Period: 2002-2017)**

| Country        | Election 1 | Election 2 | Election 3 | Election 4       | Election 5        | Election 6 |
|----------------|------------|------------|------------|------------------|-------------------|------------|
| Austria        | 10.01      | 11.04      | 17.54      | 20.51            | 26.0              | -          |
| Belgium        | 13.57      | 13.96      | 8.27       | 3.67             | -                 | -          |
| Switzerland    | 27.71      | 29.46      | 26.8       | 29.5             | -                 | -          |
| Germany        | 0.3        | 1.9        | 1.9        | 3.5 <sup>a</sup> | 11.6 <sup>a</sup> | -          |
| Denmark        | 13.3       | 13.9       | 12.32      | 21.1             | -                 | -          |
| Finland        | 1.8        | 4.2        | 19.04      | 17.65            | -                 | -          |
| France         | 13.23      | 5.88       | 13.6       | 13.2             | -                 | -          |
| United Kingdom | 2.9        | 5          | 12.6       | 1.9              | -                 | -          |
| Hungary        | 4.6        | 1.7        | 16.7       | 20.22            | -                 | -          |
| Italy          | 5.18       | 10.73      | 4.21       |                  | -                 | -          |
| Netherlands    | 17         | 5.7        | 6.1        | 15.45            | 10.08             | 13.1       |
| Norway         | 22.06      | 22.91      | 16.35      |                  | -                 | -          |
| Portugal       | 0.09       | 0.16       | 0.2        | 0.31             | 0.5               | -          |
| Sweden         | 1.4        | 2.93       | 5.7        | 12.86            | -                 | -          |

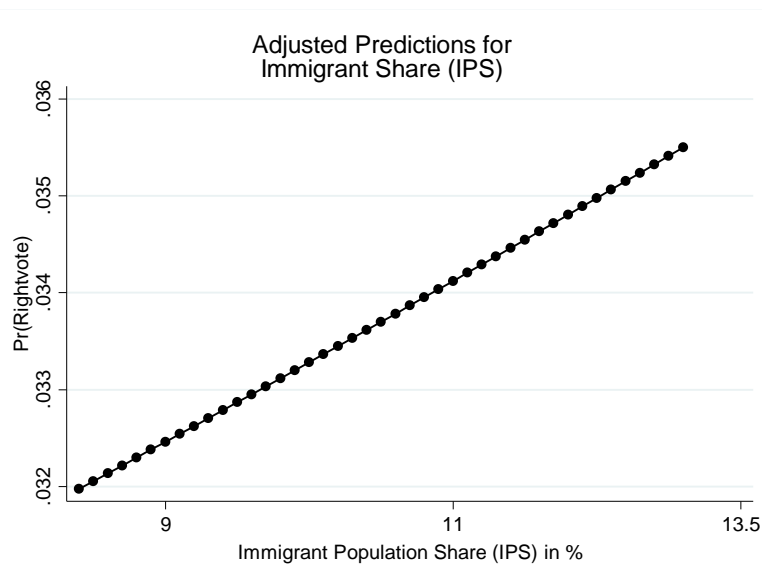
Note: This table presents the vote shares in national elections of far-right parties listed in Table 1.3. The election years are not similar for all countries. For example, in Austria, legislative elections were held in 2002, 2006, 2008, 2013 and 2017 whereas Belgian federal elections were held in 2003, 2007, 2010 and 2014. The superscript “<sup>a</sup>” indicates the inclusion of a newly formed far-right party in Germany *Alternative für Deutschland* (AfD).

**Table 1.3: List of far-right parties (period: 2002-2014)**

| <b>Country</b> | <b>References</b>                   | <b>Far-right parties</b>   |
|----------------|-------------------------------------|--|
| Austria        | Mudde (2013)                        | Austrian Freedom Party (FPO) and Bundnis Zukunft Osterreich (BZO)                    |
| Belgium        | Mudde (2013)                        | Vlaams Blok/Vlaams Belang (VB) and Front National (FN)                               |
| Switzerland    | Ivarsflaten (2006) and Mudde (2013) | Swiss People's Party (SVP), Swiss Nationalist Party (PNOS), and Swiss Democrats (SD) |
| Denmark        | Ivarsflaten (2006)                  | the Danish People's Party (DF) and Danish Progress Party (FP)                        |
| Germany        | Ivarsflaten (2006)                  | National Democratic Party of Germany (NPD) and The Republicans (REP)                 |
| Finland        | Ivarsflaten (2006)                  | Finns Party (PS) and Finnish People's Blue-Whites (SKS)                              |
| France         | Rydgren (2008)                      | Front National(FN), National Republican Movement (MNR), and Movement for France(MPF) |
| Hungary        | Mudde (2012)                        | Hungarian Justice and Life Party (MIEP), and Movement for a Better Hungary (Jobbik)  |
| Italy          | Ivarsflaten (2006)                  | Social Movement - Tricolour Flame (MS-FT), and Lega Nord (LN)                        |
| Netherlands    | Rydgren (2008) and Mudde (2013)     | Pim Fortuyn List (LPF) and Party for Freedom (PVV)                                   |
| Norway         | Rydgren (2008)                      | Progress Party (FRP)   |
| Portugal       | Mudde(2012)                         | National Renovator Party (PNR)   |
| Sweden         | Ivarsflaten (2006)                  | Swedish Democrats (SD)   |
| United Kingdom | Ivarsflaten (2006)                  | United Kingdom Independence Party (UKIP), and the British National Party (BNP)       |

Note: The table includes selected far-right parties in different European countries as suggested by referred articles.

**Figure 1.1: Immigrant share (IPS) and far-right voting**



Source: ESS 2002-2014, own calculations.

**Table 1.4: Marginal effects of a probit regression  
(Period: 2002-2014)**

|                   | <b>FRV</b>       |                  |                  |
|-------------------|------------------|------------------|------------------|
|                   | <b>(1)</b>       | <b>(2)</b>       | <b>(3)</b>       |
| Economic concerns | 0.034<br>(0.002) |                  | 0.019<br>(0.002) |
| Cultural concerns |                  | 0.038<br>(0.002) | 0.027<br>(0.002) |
| N                 | 96,402           | 96,402           | 96,402           |

Source: ESS 2002-2014, own calculations.

Notes: This table presents the marginal effects of the probit regression performed for the following dependent variable: a dummy variable indicating whether the respondent voted for a far-right party. Control variables include individual-level economic, demographic and cultural controls as shown in Table 3 of Davis and Deole (2018). Robust standard errors clustered at the country level are presented.



## 2 Refining the salience hypothesis

Does the Response to Immigration Differ Across Countries?<sup>25</sup>

### Abstract

Applied to immigration, Blalock's (1967) *salience hypothesis* predicts that contact with immigrants will tend to highlight the role of nationality in the identities of natives and thereby increase opposition to immigration. Drawing on group threat and cultural perspectives hypotheses, we consider the roles of macroeconomic conditions and national culture in salience effects. Our results indicate that economic concerns over immigration are more sensitive to the immigrant population share during difficult economic times and in countries with less religious diversity and more collectivist cultures. In contrast, cultural concerns over immigration are not sensitive to the macroeconomic and cultural variables we examine. Thus, the attitudinal response to immigration differs significantly across countries, a finding that is relevant to attempts to manage the social and political consequences of large immigration inflows.

### 2.1 Introduction

In a recent survey, immigration ranked second, after unemployment, among a list of the 14 most important issues faced by European countries (Eurobarometer 87, 2017). Research finds that concerns over immigration have important real-world consequences. Card et al. (2012) find that concerns over immigration play a large role in explaining attitudes toward immigration policy and, more broadly, emerging literature links immigration to the emergence and electoral success of ethno-nationalist, anti-immigration parties in the twenty-first century Europe and to support for Britain's exit from the European Union.<sup>26</sup>

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<sup>25</sup> Previous version circulated as "Immigration, Attitudes and the Rise of the Political Right: The Role of Cultural and Economic Concerns over Immigration". This is a coauthored work with Lewis S. Davis (Union College, NY).

<sup>26</sup> These studies make causal claims using single-country panel datasets, e.g. Halla et al. (2017) for Austria; Dustmann et al. (2018) and Harmon (2018) for Denmark; Otto and Steinhardt (2014) for the city of Hamburg (Germany); Sekeris and Vasilakis (2016) for Greece; Barone et al. (2016) for Italy; Brunner and Kuhn (2014) for Switzerland; Becker and Fetzer (2016) for the UK. Davis and Deole (2017) provide evidence on the association between the country's immigration population share and citizens' the propensity to vote for a far-right party using European data.

An important theoretical reference point for much of the empirical work on attitudes toward immigration is Blalock's (1967) *salience hypothesis*. Originally developed to explain attitudes toward racial minorities, the *salience hypothesis* holds that exposure to an outgroup increases the salience of group identity among members of the ingroup. Applied to immigration, the salience hypothesis predicts that contact with immigrants will tend to highlight the role of nationality in the identities of natives and thereby increase opposition to immigration, a proposition with strong empirical support, e.g., Quillian (1995), Dustmann and Preston (2001), Semyonov et al. (2008), and Ceobanu (2010).

In spite of its importance, our understanding of the factors that moderate the strength of the salience effect – how strongly a population responds to a given change in the immigrant population share – is quite limited. International differences in the socio-economic characteristics of the survey respondents explain a relatively small share of the cross-country variation in concerns over immigration (Malchow-Møller et al. 2009). Also, most studies that analyze attitudes toward immigration consider international cross-sectional data from a single point in time.<sup>27</sup> These studies cannot address how attitudes toward immigrants respond to *changes* in the immigrant population share, nor can they effectively control for the country characteristics. Other studies consider either panel or repeat cross-sectional data from a single country and are, therefore, not informative about international differences in response to immigration.<sup>28</sup> We address this lacuna by developing and providing empirical evidence in support of three hypotheses regarding the macroeconomic and cultural roots determinants of how attitudes toward immigration respond to changes in the immigrant population share.

*Group threat theory* suggests that hostility to immigration is a response to the perceived threat of immigration to the interests or the social position of the dominant group (Blumer, 1958; Blalock, 1967). Perceived threats are greatest in challenging economic times, tend to be increasing in the size of the immigrant population, and may reflect threats to the economic welfare, social status, or cultural hegemony of the dominant group. Support for group threat theory is found in a large body of work that investigates the role of economic self-interest related to labor market competition and the provision of public goods in the response to immigration (Scheve and Slaughter, 2001; Dustmann and Preston, 2006, 2007; Facchini and Mayda, 2009; Senik et al., 2009; Helbling and Kriesi, 2014; Jaime-Castillo et al., 2016).<sup>29</sup> Group threat

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<sup>27</sup>Examples of studies relying on cross-sectional data include Quillian (1995), Espenshade and Hempstead (1996), Evans and Need (2002), Sides and Citrin (2007), Semyonov et al. (2004), Semyonov et al. (2008), Strabac and Listhaug (2008), Ceobanu (2010), Card et al. (2012), Ortega and Polavieja (2012). Studies using national panel include Dustmann and Preston (2001), Wilkes and Corrigan-Brown (2011), and Jolly and DiGiusto (2014). To the best of our knowledge, Polavieja (2016) is the only other study that uses an international repeated cross-sectional data (2004 and 2010 ESS waves) and investigates the impact of 2009 Great Recession on European's attitudes towards immigration.

<sup>28</sup> These studies include Dustmann and Preston (2001), Semyonov et al. (2004), Wilkes and Corrigan-Brown (2011), and Jolly and DiGiusto (2014).

<sup>29</sup> The 2015 European refugee motivates us to consider whether the relationship between citizens' concerns over immigration and inflow of refugees is distinct than it is with overall immigration population share. Zimmermann et al.

theory serves to motivate our first hypothesis, which is that the attitudinal response to a change in the immigrant population share is greater during challenging economic times. Group threat theory suggests that native hostility to immigrants will be a function of economic conditions in a given area, which we proxy by the unemployment rate and real per capita income.<sup>30</sup>

A substantial body of existing research studies the relevance of macroeconomic environment for citizens' attitudes towards immigration, including GDP and GDP growth (Billiet et al., 2014; Sides and Citrin, 2007; Schneider, 2008; Semyonov et al., 2008) and the unemployment rate (Espenshade and Hempstead, 1996; Wilkes and Corrigan-Brown, 2011; Billiet et al., 2014). However, none of these studies investigates the role of the country's macroeconomic environment in shaping how its citizens' attitudes toward immigration respond to changes in the immigrant population share, as we do here.

The *cultural perspectives hypothesis*, which has intellectual roots in the work of Max Weber, holds that cultural factors may play an independent causal role in economic and political life.<sup>31</sup> According to Vallas et al. (2009, p. 202), the cultural perspectives hypothesis “*attributes independent causal power to normative orientations*” of the native population. Normative concerns may reflect nationalism (Quillian, 1995; Mayda, 2006; Sides and Citrin, 2007), racism or ethnocentrism (Quillian, 1995; Citrin et al., 1997; Dustmann and Preston, 2007), parochialism (Schneider, 2008; Vallas et al., 2009), language (Chandler and Tsai, 2001), religious sectarianism (Facchini et al., 2013), or concerns over immigrant work ethic (Helbling and Kriesi, 2014). The cultural perspectives approach is sometimes presented as an independent theoretical construct and sometimes as a strand of the group threat theory.

We draw on the cultural perspectives hypothesis to motivate hypotheses regarding the role of two dimensions of national culture in salience effects. The first hypothesis regards the role of religious diversity and draws on *contact theory*, which holds that hostility to immigration stems from social and institutional barriers between immigrant and native populations (Vallas et al., 2009). Not only is religious difference itself an important marker of cultural differences, and a potential source of concern over the cultural impact of immigration, but a broad reading of contact theory suggests that the experience of living in a religiously diverse society would tend to make natives less concerned with other forms of social diversity, including those associated with immigration. As a result, we expect that attitudes toward immigration will be less

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(2000) and O'Rourke and Sinnott (2006), for example, suggest that the native response to refugees may differ from that to other immigrants. We revisit this curious question in the fourth chapter of the thesis by employing a causal investigation of the impact of the refugee crisis on concerns over immigration.

<sup>30</sup> While most analyses of group threat theory focus on the unemployment rate, Friedman (2005) argues that economic growth alters people moral sentiments, making them less concerned with horizontal social comparisons and more accepting of policies that benefit excluded or marginalized groups. See Davis & Knauss (2013) for a discussion and empirical test of Friedman's hypothesis

<sup>31</sup> See Guiso et al. (2006) for further discussion of this point.

sensitive to changes in the immigrant population share in countries with a history of greater religious diversity.

Our second cultural hypothesis regards a country's position on the individualism-collectivism continuum. Individualism and collectivism reflect the importance of social relationships in an individual's identity (Gorodnichenko and Roland, 2011). Our interest in the role of individualism is rooted in several considerations. First, individualism may reduce the degree to which individuals are attached to various group identities, including those rooted in national, ethnic, and religious identity, reducing the role of group threat in response to immigration. In particular, individualists may be less sensitive to the perceived threats to these group identities posed by immigration. Second, individualism is associated with more moderate distinctions between social insiders and outsiders (Nikolaev and Salahodjaev, 2017) and with a general rather than limited morality (Alesina and Giuliano, 2015), both of which ought to reduce the scope of xenophobia. Finally, adherence to an individualist perspective may reduce the degree to which an individual is willing to express attitudes toward immigrants as a group. All three considerations suggest that individualism may serve to temper the strength of salience effects.

We investigate these hypotheses using data from the first five waves of the European Social Survey with OECD measures. Matched with data on culture and immigrant population shares, we have information from 22 countries. We consider two dimensions of the attitudes toward immigration, as reflected in concern over the economic impact of immigration and concern over the impact of immigration on national culture. Differentiating between economic and cultural concerns over immigration is potentially important for policymakers, as the locus of concern may suggest different policy responses. For example, concerns over the economic impact of immigration may suggest policies to increase native employment, while cultural concerns may be addressed by policies designed to foster assimilation.

Our key results are as follows. First, while salience effects matter for both economic and cultural concerns over immigration, economic concerns are significantly more sensitive to immigration flows. Second, when considering economic concerns over immigration, both macroeconomic conditions and national culture matter for the strength of salience effects. As predicted, economic concerns over immigration are more sensitive to the immigrant population share in difficult macroeconomic times and countries with less diverse and more collectivist cultures. In contrast, neither macroeconomic conditions nor national culture appears to moderate the sensitivity of cultural concerns to the immigrant population share.

Thus, our results suggest that there are substantial international differences in the intensity of response to immigration across countries. This finding may be important to policymakers attempting to manage the social and political consequences of large immigration inflows, such as those associated with the European refugee crisis.



The remainder of this chapter is organized as follows. Section 2 introduces the data. Section 3 presents results on 1) immigration concerns, and 2) examines the individual-level determinants of concerns over immigration. Section 4 considers the role of macroeconomic conditions and national culture. Section 5 concludes.

## **2.2 Data**

Our primary data source is the first five waves of the European Social Survey (ESS) consisting of observations from 22 European countries: Austria, Belgium, Switzerland, the Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Great Britain, Greece, Hungary, Ireland, Luxembourg, the Netherlands, Norway, Poland, Portugal, Sweden, Slovenia, and the Slovak Republic. ESS is a biennial survey that started in the year 2002. Its special focus on migration and minorities adds value to our choice of the survey. We limit our analysis to the first five rounds, e.g., through 2010. We also restrict the analysis to respondents who are citizens of the country in which they are surveyed.

### **2.2.1 Individual-level variables**

Individual-level variables are taken from the ESS survey responses and include economic and cultural concerns over immigration, and a variety of demographic, economic, and cultural characteristics that may be associated with attitudes toward immigration. Summary statistics for these variables are presented in Table 2.1.

The main dependent variables in our analysis consist of two variables that record a respondent's concerns over the economic and cultural impact of immigration on their country. The question that records citizen's economic concerns towards immigration asks: "Would you say it is generally bad or good for [country's] economy that people come to live here from other countries?" The individual response to this question ranges in the scale from 0-10, where 0 indicates that the respondent believes immigration is bad for the economy, and 10 indicates that respondent perceives that immigration is good for the economy.<sup>32</sup> Our measure of cultural concerns over immigration is derived from a similar question, which asks: "Would you say that [country's] cultural life is generally undermined or enriched by people coming to live here from other countries?" The answer 0 to this question signifies that the respondent believes that immigration

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<sup>32</sup> Unfortunately, the ESS does not include survey questions asking respondents to qualify citizens' concerns on the basis of types of immigration (high-skilled vs. low-skilled immigration, immigration from high-income vs. low-income countries, EU vs. non-EU immigration) and distinct economic effects of immigration (impact on wages, welfare system, jobs, etc.) in all waves. Consequently, the two main dependent variables used in this paper represent the respondent's general concerns over economic and cultural impact of immigration. For a relatively detailed analysis of the role of skills in natives' attitudes towards immigration, please see Hainmueller and Hiscox (2010).

undermines the cultural life, and the response 10 suggests that the respondent perceives that immigration enriches the cultural life of her country.

We manipulate the raw data on concern over immigration in two ways. First, we reverse the order of the responses so that higher values are associated with greater concern over the impact of immigrants. For example, an individual's economic concerns now range from 0 (immigration is good for the country's economy) to 10 (immigration is bad for the country's economy). Second, we normalize these variables using the standardized coefficients technique. The resulting variables have zero means and standard deviations of one. Normalization facilitates our investigation as we can now compare results for regressions employing the two distinct measures of concerns over immigration as dependent variables.

In studying an individual's concerns over immigration, O'Rourke and Sinnott (2006), for example, show that several demographic, economic, and cultural characteristics form important considerations. Therefore, we employ a variety of variables that reflect an individual's demographic, economic, and cultural characteristics. Demographic variables include an individual's age, gender, marital status, and a dummy variable for whether children are living at home. Hainmueller and Hiscox (2011) show that the respondent's education is an important determinant of her attitudes towards immigration. For example, they find that less-educated European natives oppose all types of immigration (skilled as well as unskilled immigration), whereas respondents with higher education and occupation skills favor all types of immigration, even that of skilled immigrants. O'Rourke and Sinnott (2006) argue that unemployed respondents may be more anti-immigration than employed as they fear labor market competition posed by immigrants. Additionally, self-employed respondents may not be as concerned about labor market competition posed by immigrants as respondents active in the labor market. Therefore, we control for the respondent's economic characteristics, including an individual's income, education level, and employment status.

We also include several cultural variables in our regressions. O'Rourke and Sinnott (2006), for example, find that the respondents' migrant background makes them less concerned over further immigration. Additionally, information on the respondents' religiosity and ethnicity are other important controls. Therefore, the regressions include an individual's religious affiliation, the immigration status of their parents, a dummy variable for belonging to an ethnic minority, and a measure of religiosity, as indicated by attendance at religious services. It must be noted that the categorization of variables into economic and cultural characteristics is imperfect, as many variables could count in multiple categories. For example, Hainmueller and Hiscox (2011) argue that an individual's education can be associated with her cultural identity as well as her economic situation.

### 2.2.2 Country-level variables

Country-level variables include the immigrant population share and the two measures of national culture. Data on immigrant population share comes from OECD's migration statistics.<sup>33</sup> Our measure of religious diversity originates from Religious Adherence data (2003).<sup>34</sup> <sup>35</sup> The dataset provides religion Herfindahl index (sum of the squares of the population shares belonging to ten religious traditions). Using this information, we construct our religious diversity indicator, which is one minus the Herfindahl index. In words, the indicator reflects the probability that any two randomly selected individuals in a country will belong to different religious or philosophical traditions. To avoid issues of reverse causation, we employ the measure of religious diversity in the year 1970.<sup>36</sup> Finally, our measure of individualism is from Hofstede (1985, 2001) and is the most commonly used measure of individualism in social sciences.<sup>37</sup> Countries are ranked on a scale ranging from Collectivism vs. Individualism (0-100). Summary statistics for these variables are presented in Table 2.1.

## 2.3 Results and discussion

### 2.3.1 Immigration and concerns over immigration

We begin the empirical investigation by examining the salient effect of immigrant population share in a country on citizen's economic and cultural concerns over immigration. Our baseline empirical model is as follows:

$$A_{ict} = \beta_0 + \beta_1 IPS_{ct} + \beta_2 X_{ict} + \beta_3 E_{ict} + \beta_4 C_{ict} + \gamma_c + \gamma_t + \mu_{ict} \quad (2.1)$$

In this specification, the dependent variable  $A_{ict}$  measures the self-reported concern towards immigration of the individual  $i$  from country  $c$  and in time  $t$ ;  $IPS_{ct}$  is the immigrant share of population in the country  $c$  at time  $t$ ;  $X_{ict}$ ,  $E_{ict}$  and  $C_{ict}$  are vectors of  $i$ 's demographic, economic, and cultural characteristics; and  $\gamma_c$  and  $\gamma_t$  are the country and time specific dummies; and  $\mu_{ict}$  is the error term. The inclusion of country fixed effects allows us to control for unobserved, time-invariant variables that might be correlated with key

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<sup>33</sup> The data for the immigrant population share in European countries is collected from OECD (2014) International Migration Outlook.

<sup>34</sup> See McCleary and Barro (2006) for detailed information on the measure.

<sup>35</sup> The data is made available on the following webpage: <https://scholar.harvard.edu/barro/publications/religion-adherence-data>

<sup>36</sup> McCleary and Barro (2006) provide measures of religious diversity in 1900, 1970, and 2000. We view the first as too early to influence attitudes in our survey window, and the latter to be too recent. In any event, the correlation between religious diversity in 1970 and 2000 exceeds 0.95, and results using the 2000 religious diversity measure are both qualitatively and quantitatively similar to those using the 1970 measure.

<sup>37</sup> The dataset is made available on the following webpage: <https://www.hofstede-insights.com/country-comparison/>

variables of interest, such as the immigrant share. Similarly, the inclusion of period fixed effects allows us to control for Europe-wide shocks to concerns over immigrants. The results table presents OLS estimates.<sup>38</sup>

Note that since the immigrant share of a country's population is endogenous, the coefficients in Table 2.2 should not be interpreted as causal effects. One source of endogeneity is the reverse causation. The available evidence suggests that hostility to immigration may likely reduce immigration flows, either by influencing immigration policy (Facchini and Mayda, 2008; Facchini et al., 2011) or by making a country's social environment less hospitable to immigrants (Knabe et al., 2013). The econometrically appropriate way to address the endogeneity of immigration is through the use of instrumental variables. However, we were unable to identify appropriate instruments.<sup>39</sup> Nevertheless, we refer to the previous work that indicates that the magnitude of any bias due to reverse causation is likely to be small (Olivier and Wong, 2003).

Table 2.2 presents the main results. Columns (1) and (2) provide strong support for the salience hypotheses. The immigrant population share is a statistically significant determinant of both measures of concern over the impact of immigration. We note also that economic concerns are 2.74 times as sensitive to the immigrant share as are cultural concerns. Because we are controlling for country fixed effects, these coefficients reflect the association of changes in the share of the immigrant population with changes in immigration concerns. Moreover, these effects are economically large. For example, a 1.34 percentage point increase in the share of the foreign-born has roughly the same association with economic concerns over immigration as to have a native, rather than immigrant father. Similarly, having a native father shares a similar association with individual's cultural concerns over immigration as a 3.66 percentage point rise in the immigrant population share does.

### **2.3.2 Robustness checks**

Table 2.3 presents a number of robustness checks on our results. While we continue to control for the individual level characteristics used in Table 2.2, we do not report or discuss these results. In our initial robustness test, we rerun our baseline specification augmented to include a country-specific *linear* time trend. The country and year fixed effects present in the baseline specification are substituted by country-specific linear time trends to control for other changes in outcome variables that vary by country. As

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<sup>38</sup> We employ weights provided by the survey for our study. These weights include both the design weight (DWEIGHT) and the population weight (PWEIGHT). For more information, please see "Weighting European Social Survey Data": [https://www.europeansocialsurvey.org/methodology/ess\\_methodology/data\\_processing\\_archiving/weighting.html](https://www.europeansocialsurvey.org/methodology/ess_methodology/data_processing_archiving/weighting.html). The standard errors are clustered on country level for all the regressions.

<sup>39</sup> Halla et al. (2017) use past immigrants' settlement patterns as an instrumental variable to address the issue of endogeneity in their analysis of the impact of immigrant share on the vote share of FPO in Austria. However, we consider that these historical patterns are not entirely exogenous to our modeling strategy and hence, are not appropriate instruments.

indicated in columns 1 and 2, our results are largely robust to this change of specification. The coefficients on the immigrant share are positive, significant and very similar in magnitude to those reported in Table 2.2. Next, we examine the effect of restricting the sample the countries of continental Europe and to EU member countries. As seen in columns 3-4 of Table 2.3, the immigrant population share continues to be strongly related to concerns over the economic and cultural impact of immigration.

Finally, we investigate specifications in which the relationship between migrant share and concerns among citizens towards immigration is non-linear. We do this by considering a quadratic relationship between the immigrant population share and native concerns. As seen in columns 5 and 6, the pattern of coefficient signs indicates a concave relationship between the immigrant share and economic and cultural concerns over immigration, though the coefficients on the squared term are not statistically significant.

In conclusion, we find substantial support for the salience hypothesis. Regarding the salience hypothesis, both economic and cultural concerns are increasing in the immigrant population share. Economic concerns over immigration also appear to be significantly more sensitive to changes in immigration than are cultural concerns. Next, we turn our attention to the role of macroeconomic and national-cultural characteristics in moderating economic and cultural concerns over immigration.

#### **2.4 Is the response to immigration uniform across countries?**

The previous section demonstrates support for the salience hypothesis in that both economic and cultural concerns over immigration are increasing in the immigrant population share. An important limitation of these findings is that the specifications used to restrict the response to immigration to be uniform across countries and, indeed, our results may be thought of as reflecting this relationship in a hypothetical average European country. In this section, we broaden the analysis to test for the presence of systematic differences in the response to immigration across countries associated with a country's macroeconomic conditions and dimensions of national culture.

#### **Macroeconomic Conditions and Salience Effects**

We begin by considering several variations on group threat theory, which suggests that native hostility to immigrants will be a function of macroeconomic conditions and of the relative size of the minority group. The macroeconomic indicators we employ are the unemployment rate and the log of per capita income. Higher rates of unemployment may increase anxiety over immigration by increasing the perceived competition between native and immigrant job seekers and by increasing the shares of the native and immigrant populations requiring public assistance. Per capita income may affect concerns over immigration

by reducing the perceived burden of immigrant consumption of public services. More generally, economic growth may make people less concerned with horizontal social comparisons and, thus, more accepting of policies that benefit excluded or marginalized groups, as argued by Friedman (2005).

Our results are presented in Table 2.4. We begin by adding the national unemployment rate to the baseline specifications used in Table 2.2. Columns one and two show that unemployment increases the level of economic concern over immigration while leaving cultural concerns over immigration unchanged. The association of unemployment with economic concerns over immigration is also economically large.<sup>40</sup> The point estimates indicate that a one percentage point increase in unemployment is roughly 80 percent of the effect of a one percentage point increase in the immigrant population share.

In interpreting these results, it is important to note that our baseline specification includes several controls for the respondent's income level and employment status, including an indicator for whether he or she was unemployed during previous three months. Because of this the results reported in Table 2.4 for macroeconomic variables are more naturally interpreted as a measure of group threat, or concern for the welfare of the native population as a group, rather than as an indication of the perceived personal threat of immigration to the individual's economic situation.

In columns three and four, we include an interaction term to test whether the unemployment rate affects the sensitivity of concerns over immigration to the immigrant population share. Our results, a positive and significant coefficient on the interaction terms, suggest that it does. Point estimates indicate that unemployment increases economic concerns over immigration for countries in which the immigrant share of the population is greater than 6.2%, a threshold that is significantly below the sample average of 12.2%. As seen in column four, we find a similar result using cultural concerns over immigration as the dependent variable. However, in this case, the coefficient on the unemployment-immigrant population share is both smaller in magnitude, about one-third as large as that in column 3, and less precisely estimated, being significant only at the 10% level.

In columns five to eight, we study the other macroeconomic indicator: the log per capita income. Unlike the analysis of unemployment rate, in columns five and six, we find that the association between log per capita income and economic and cultural concerns over immigration are statistically insignificant.<sup>41</sup> In columns

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<sup>40</sup> Espenshade and Hempstead (1996) and Wilkes & Corrigan-Brown (2011) find that there exists a positive association between the unemployment rate and anti-immigration attitudes. However, Billiet et al. (2014) find no such relationship between the unemployment rate in the time of economic crisis in 2010 and the perceived ethnic threat towards immigrants.

<sup>41</sup> Sides & Citrin (2007), Semyonov et al. (2008), and Schneider (2008) find a negative association between GDP per capita and anti-immigration attitudes. Furthermore, Billiet et al. (2014) find that both the GDP growth rate in the time of economic crisis in 2010 as well as the change in GDP growth rate over the period from 2007-2010 significantly and negatively affect the perceived ethnic threat towards immigrants.

seven and eight, we include both the log of per capita income and its interaction with the immigrant population share. As seen in column 7, the coefficient on the interaction term is both negative and significant; indicating that for economic concerns over immigration the strength of salience effect is falling in the level of per capita income. Our results for cultural concerns over immigration are qualitatively similar, though again, here the coefficient on the interaction term is both smaller and less precisely estimated than it was for economic concerns over immigration. Evaluated at the mean level of per capita income for our sample, a ten percent increase in per capita income reduces the size of the salience effect by 6.6% for economic concerns over immigration and by 4.5% for cultural concerns.

These results are consistent with group threat theory and, more particularly, with the hypothesis that macroeconomic conditions matter for how a country's population responds to immigration. An increase in the immigrant population share will generate a greater rise in concern over immigration in countries with the poor macroeconomic environment. In addition, while the evidence suggests that the country's macroeconomic environment shares association with citizen's both economic and cultural concerns over immigration, this association is both larger and more precisely estimated for economic than cultural concerns. This outcome is consistent with our results from Table 2.2, which suggest that economic concerns are more sensitive to the immigrant population share than are cultural concerns.

### **National Culture and Salience Effects**

Next, we consider how national culture shapes native concerns over immigration, focusing on two dimensions of national culture, religious diversity, and individualism. Contact theory suggests that a country's historical experience of religious diversity may tend to make natives less concerned with immigration and less sensitive to increases in the immigrant share of the population, while individualism is associated with reduced attachment to group identities, which may reduce the weight given to any perceived group threat from immigration.

We rely on a single measure of each variable for each country; religious diversity is measured in 1970 and Hofstede's individualism measure is constructed from survey data collected between 1967 and 1973. Because national culture is highly persistent, the use of a single observation of each variable is appropriate. A downside to this approach is that it precludes directly examining the effect of culture on concerns over immigration, as our cultural variables are perfectly collinear with the country fixed effects. Instead, we consider specifications in which national culture is interacted with the immigrant population share, which allows us to address how culture affects the presence or strength of salience effects.

Our results, presented in Table 2.5, indicate that national culture plays a significant role in shaping concerns over immigration and suggest significant international differences in the sensitivity of these concerns to the immigrant share of the population. In particular, we find that economic concerns over immigration are lower for countries with greater religious diversity and more individualistic cultures. For example, in a country with the mean level of religious diversity, equal to 0.329, increase in the immigrant share of the population is associated with increase in economic concerns by 0.045. In contrast, in a country that is one standard deviation less diverse, religious diversity = 0.11, increase in immigrant share of the population increases economic concerns by 0.0774, an increase that is around seventy-five percent larger. The finding that religious diversity is associated with reduced salience effects is consistent with contact theory. In particular, familiarity with one form of cultural diversity, associated with religion, may make natives less concerned with forms of cultural diversity arising from immigration.

Differences in individualism and collectivism have an economically significant moderating association with how economic concerns of the country's natives respond to immigration as well. For a country with the mean level of individualism, increase in the immigrant share of the population is associated with an increase in economic concerns by 0.064. While for a country that is one standard deviation below the mean level of individualism, an increase in immigration share of the population is associated with an increase in economic concerns by 0.095, an increase that is roughly 50% larger. These results suggest that it makes little sense to talk about the effect of immigration on concerns over immigration in general, as this response depends very strongly on a country's cultural makeup.

Finally, note that neither religious diversity nor individualism appears to moderate the sensitivity of cultural concerns over immigration to the immigrant share of the population. In particular, the interaction effects in columns two and four are not significantly different from zero. To some degree, these non-results violate our priors. For example, we expected natives in religiously diverse countries to feel less culturally threatened by immigration than natives in more religiously homogenous countries.

## **2.5 Conclusion**

This chapter investigates the determinants of native concerns over the economic and cultural impact of immigration. We find strong and consistent support for the salience hypothesis, the proposition that native concerns over immigration are increasing in the immigrant share of the population (Blalock 1967). Our findings also indicate the presence of significant international differences in how native attitudes toward immigration respond to changes in the immigrant population share. In particular, we find that economic concerns over immigration are more sensitive to changes in the immigrant population share in countries with 1) higher unemployment rates, 2) lower levels of per capita income, 3) less religious diversity, and 4)



more collectivist cultures. In general, cultural concerns over immigration are less sensitive to changes in the immigrant population share, and these effects appear to be weaker in a stronger macroeconomic environment. Finally, we did not find that national culture affected the strength of salience effects related to cultural concerns over immigration.

We believe these findings may be of use to policymakers in the European Union and other international bodies attempting to reduce the social and political challenges associated with immigration in a multinational setting. More generally, our results suggest caution in extrapolating results regarding attitudes toward immigration across countries or periods with different macroeconomic conditions.

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## Appendix

**Table 2.1: Descriptive statistics**

| VARIABLES  | (1)<br>Mean | (2)<br>Sd |
|--|-------------|-----------|
| <b>Macro indicators (22 countries)</b>                   |             |           |
| <b>Immigrant Population Share (IPS)</b>                  | 12.234      | 7.921     |
| <b>Macroeconomic indicators</b>                          |             |           |
| Log GDP pc   | 10.394      | 0.388     |
| Unemployment rate  | 7.054       | 3.515     |
| <b>Macro-cultural indicators</b>                         |             |           |
| Hofstede's individualism index                           | 63.571      | 14.538    |
| Historical religious diversity (1-Herfindahl)            | 0.329       | 0.218     |
| <b>Individual level variables (Observations=93, 539)</b> |             |           |
| <b>Attitudes towards immigration (scale 0-10)</b>        |             |           |
| Immigration bad for country's economy (EC)               | 4.965       | 2.302     |
| Country's cultural life undermined by immigrants (CC)    | 4.187       | 2.413     |
| <b>Demographic characteristics</b>                       |             |           |
| Female   | 0.501       | 0.500     |
| Age  | 48.54       | 16.92     |
| Married  | 0.525       | 0.499     |
| Urban  | 0.305       | 0.460     |
| Live with children                                       | 0.391       | 0.488     |
| Household size   | 2.598       | 1.335     |
| <b>Economic characteristics</b>                          |             |           |
| Education  | 12.67       | 4.003     |
| Household income   | 6.241       | 2.668     |
| Business owner   | 0.013       | 0.113     |
| Retired  | 0.239       | 0.427     |
| Self-employed  | 0.111       | 0.314     |
| Ever unemployed for 3 months                             | 0.264       | 0.441     |
| <b>Cultural characteristics</b>                          |             |           |
| Immigrant father   | 0.077       | 0.267     |
| Immigrant mother   | 0.077       | 0.267     |
| Islam  | 0.007       | 0.083     |
| Catholic   | 0.275       | 0.446     |
| Protestant   | 0.225       | 0.418     |
| Eastern Orthodox   | 0.016       | 0.127     |
| Jew  | 0.001       | 0.031     |
| Other Christian Religion                                 | 0.014       | 0.115     |

|                              |       |       |
|------------------------------|-------|-------|
| Eastern Religion             | 0.003 | 0.056 |
| Other Religions              | 0.003 | 0.053 |
| Belong to an ethnic minority | 0.027 | 0.163 |
| Religiosity                  | 4.400 | 2.906 |

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Note: This table summarizes the data variables used in this study. Respondent's attitudes towards immigration are recorded on a scale from 0 to 10 (0 being the lowest). The data on country's immigrant share, GDP pc and unemployment rate are macro indicators obtained from the OECD database. Variable Female takes the value of 1 if the respondent reports her gender as female and 0 otherwise. Similarly, variable Married takes the value of 1 if the respondent has reported being married and 0 otherwise. HH income indicates the total income of the household. Variables indicating employment relation of the respondent take the value of 1 if the respondent reports himself/herself as an employee, business owner, retired or self-employed personnel and 0 otherwise. Variables indicating respondent's religious beliefs take the value of 1 if the respondent has reported his/her religion as Islam, Catholic, Protestant, Eastern Orthodox, Jew, etc, and 0 otherwise.

**Table 2.2: Immigrant population share and concerns**

| VARIABLES                    | (1)<br>EC              | (2)<br>CC              |
|------------------------------|------------------------|------------------------|
| Immigrant Share (IPS)        | 0.086***<br>(3.507)    | 0.032***<br>(3.381)    |
| Female                       | 0.135***<br>(9.696)    | -0.0203<br>(-0.673)    |
| Age                          | -0.00589*<br>(-1.957)  | -0.00356<br>(-0.707)   |
| Age-squared                  | 2.60e-05<br>(1.066)    | 3.85e-05<br>(0.781)    |
| Married                      | 0.0227**<br>(2.217)    | 0.0502**<br>(2.518)    |
| Urban                        | -0.0860***<br>(-5.815) | -0.0801***<br>(-7.117) |
| Live with children           | 0.00302<br>(0.211)     | -0.0315*<br>(-2.054)   |
| Household size               | 0.0114*<br>(1.751)     | 0.0174**<br>(2.395)    |
| Education                    | -0.0566***<br>(-9.066) | -0.0563***<br>(-7.188) |
| Household income             | -0.0354***<br>(-7.770) | -0.0330***<br>(-8.802) |
| Owner                        | -0.0271<br>(-0.835)    | 0.0271<br>(0.635)      |
| Retired                      | 0.0250<br>(1.113)      | 0.0259<br>(1.044)      |
| Self-employed                | -0.0312**<br>(-2.140)  | -0.00231<br>(-0.112)   |
| Ever unemployed for 3 months | 0.0389<br>(1.719)      | -0.00376<br>(-0.176)   |
| Immigrant father             | -0.113***<br>(-5.062)  | -0.0709***<br>(-3.314) |
| Immigrant mother             | -0.0901***<br>(-4.097) | -0.111***<br>(-3.124)  |
| Islam                        | -0.432***<br>(-4.212)  | -0.548***<br>(-7.599)  |
| Catholic                     | 0.0747**<br>(2.163)    | 0.135***<br>(8.130)    |
| Protestant                   | 0.0315<br>(0.967)      | 0.0716<br>(1.644)      |
| Eastern orthodox             | 0.182<br>(1.576)       | 0.276***<br>(3.210)    |
| Jew                          | -0.149**<br>(-2.102)   | 0.0531<br>(0.979)      |



|                              |                       |                       |
|------------------------------|-----------------------|-----------------------|
| Other Christian              | -0.029<br>(-0.751)    | 0.006<br>(0.186)      |
| Eastern religion             | -0.099<br>(-1.616)    | -0.274***<br>(-3.299) |
| Other religion               | -0.006<br>(-0.087)    | -0.110<br>(-0.789)    |
| Belong to an ethnic minority | -0.064***<br>(-3.645) | -0.0361<br>(-1.464)   |
| Religiosity                  | -0.014***<br>(-2.974) | -0.0121<br>(-1.716)   |
| Country FEs                  | YES                   | YES                   |
| Year FEs                     | YES                   | YES                   |
| Observations                 | 93,539                | 93,539                |
| R-squared                    | 0.130                 | 0.154                 |

Note: The dependent variables used in this table are: EC - Immigrants are bad for economy and CC - Immigrants undermine culture. The results for all the individual level controls are uniquely shown. The standard errors are clustered on the country level for all the regressions. t statistics in parentheses: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

**Table 2.3: Robustness checks**

| VARIABLES           | Full Sample          |                      | Continental European |                      | Full Sample          |                       |
|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|
|                     | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                   |
|                     | EC                   | CC                   | EC                   | CC                   | EC                   | CC                    |
| IPS                 | 0.0714***<br>(3.431) | 0.0289***<br>(3.699) | 0.0803***<br>(3.413) | 0.0319***<br>(3.332) | 0.114**<br>(2.533)   | 0.0447***<br>(3.116)  |
| IPS Squared         |                      |                      |                      |                      | -0.00114<br>(-0.602) | -0.000515<br>(-0.911) |
| Individual Controls | YES                  | YES                  | YES                  | YES                  | YES                  | YES                   |
| Country FEs         | NO                   | NO                   | YES                  | YES                  | YES                  | YES                   |
| Year FEs            | NO                   | NO                   | YES                  | YES                  | YES                  | YES                   |
| Country Time Trend  | YES                  | YES                  | NO                   | NO                   | NO                   | NO                    |
| Observations        | 93,539               | 93,539               | 83,502               | 83,502               | 93,539               | 93,539                |
| R-squared           | 0.128                | 0.153                | 0.126                | 0.150                | 0.130                | 0.154                 |

Note: The first two columns re-estimate the baseline regressions using country-specific linear time trends as a robustness check. Columns (3) and (4) repeat the baseline regressions presented in Table 2.2 by restricting the sample to Continental European countries only (all countries except, Great Britain, and Ireland). The analysis presented in columns (5) and (6) considers the non-linear relationship between immigrant share of population and concerns. The standard errors are clustered on the country level for all the regressions. t statistics in parentheses \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

**Table 2.4: Macroeconomic channels that shape concerns**

| VARIABLES           | (1)                  | (2)                 | (3)                   | (4)                  | (5)                  | (6)                  | (7)                    | (8)                  |
|---------------------|----------------------|---------------------|-----------------------|----------------------|----------------------|----------------------|------------------------|----------------------|
|                     | EC                   | CC                  | EC                    | CC                   | EC                   | CC                   | EC                     | CC                   |
| IPS                 | 0.0445**<br>(2.600)  | 0.0291**<br>(2.756) | -0.00882<br>(-0.326)  | 0.00859<br>(0.558)   | 0.0832***<br>(3.506) | 0.0325***<br>(3.403) | 0.714***<br>(3.702)    | 0.204**<br>(2.274)   |
| UR                  | 0.0355***<br>(11.13) | 0.00223<br>(0.824)  | -0.0298<br>(-1.554)   | -0.0229*<br>(-1.944) |                      |                      |                        |                      |
| IPS*UR              |                      |                     | 0.00476***<br>(3.346) | 0.00183**<br>(2.127) |                      |                      |                        |                      |
| Log GDP pc          |                      |                     |                       |                      | -0.413<br>(-0.572)   | 0.123<br>(0.397)     | 0.290<br>(0.400)       | 0.315<br>(0.951)     |
| IPS* Log GDP pc     |                      |                     |                       |                      |                      |                      | -0.0602***<br>(-3.300) | -0.0164*<br>(-1.873) |
| Individual controls | YES                  | YES                 | YES                   | YES                  | YES                  | YES                  | YES                    | YES                  |
| Country FEs         | YES                  | YES                 | YES                   | YES                  | YES                  | YES                  | YES                    | YES                  |
| Year FEs            | YES                  | YES                 | YES                   | YES                  | YES                  | YES                  | YES                    | YES                  |
| Observations        | 93,097               | 93,097              | 93,097                | 93,097               | 93,539               | 93,539               | 93,539                 | 93,539               |
| R-squared           | 0.132                | 0.154               | 0.133                 | 0.155                | 0.130                | 0.154                | 0.131                  | 0.155                |

Note: This table presents the analysis for the macroeconomic channels (country-level information on unemployment rate and GDP pc) that should shape respondent's concerns towards immigration. The standard errors are clustered on the country level for all the regressions. t statistics in parentheses \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

**Table 2.5: Macro cultural channels that shape concerns**

| <b>VARIABLES</b>                | <b>(1)</b><br><b>EC</b> | <b>(2)</b><br><b>CC</b> | <b>(3)</b><br><b>EC</b> | <b>(4)</b><br><b>CC</b> |
|---------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| IPS                             | 0.0938***<br>(6.009)    | 0.0328***<br>(4.010)    | 0.198***<br>(12.84)     | 0.0561***<br>(6.495)    |
| IPS*Religious<br>Diversity 1970 | -0.149***<br>(-3.503)   | -0.0193<br>(-0.712)     |                         |                         |
| IPS*Individualism               |                         |                         | -0.00210***<br>(-4.230) | -0.000456<br>(-1.665)   |
| Individual controls             | YES                     | YES                     | YES                     | YES                     |
| Country FEs                     | YES                     | YES                     | YES                     | YES                     |
| Year FEs                        | YES                     | YES                     | YES                     | YES                     |
| Observations                    | 93,539                  | 93,539                  | 91,815                  | 91,815                  |
| R-squared                       | 0.130                   | 0.154                   | 0.130                   | 0.155                   |

Note: This table presents the analysis for macro-cultural channels that shape an individual's concerns towards immigration. The first two columns of the table analyze the religious channel in the form of historical presence of religious diversity in the country. Columns (3) and (4) analyze another cultural channel: Individualism - the individualistic or collectivistic values present in the culture of the respondent's country. The standard errors are clustered on the country level for all the regressions. t statistics in parentheses \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

## 3 Justice delayed is assimilation denied

### Right-wing terror and immigrants' assimilation in Germany<sup>42</sup>

“The term "terrorism" means premeditated, politically motivated violence perpetrated against noncombatant targets by sub-national groups or clandestine agents, usually intended to influence an audience”. - US Department of State definition (2003) pp. xii.

#### Abstract

In 2011 a German right-wing extremist group was exposed in the media as having killed individuals of Turkish ethnicity in the early 2000. The press coverage highlighted the inability of authorities to name perpetrators sooner. Authorities were criticized for (alleged) institutional racism. In this chapter, we show that this episode reinforced significantly a feeling of estrangement among Turkish immigrants, who become less likely to self-identify as Germans. This episode was also followed by a substantial decrease in their health satisfaction and subjective wellbeing.

#### 3.1 Introduction

As the developed world experiences more and more terrorist attacks perpetrated by homegrown Islamist terrorists, the question of assimilation of Islamic immigrants in the West has come to the forefront of policy discussion. Islamic immigrants were already not as well-assimilated in the West as most other immigrant groups in countries such as France, Germany, and the United Kingdom (Algan et al., 2012; Constant et al., 2006; Constant et al., 2012; Georgiadis and Manning 2012). Nevertheless, an emerging strand of economics literature finds that recent terrorist events have led to even greater deterioration of their social outcomes (Gould and Klor, 2016; Haddad, 2007; Elsayed and de Grip, 2017). According to the literature, Islamist terror attacks induce a backlash against Islamic residents, which increases their assimilation costs and decreases the rate of assimilation into the host environment. However, studies have neglected the impact of unprovoked right-wing violence against Islamic minorities on their social assimilation outcomes.

This chapter fills this gap in the literature by considering an episode in 2011, in which the National Socialist Underground (NSU) network, a right-wing extremist group in Germany, was exposed as having targeted

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<sup>42</sup> This chapter is a modified version of the original article Deole (2019): <https://doi.org/10.1016/j.labeco.2019.03.005>.

and killed individuals of mostly Turkish ethnicity in the early 2000s.<sup>43 44</sup> Further investigation implicated the group in the murders of eight individuals of Turkish origin and two bombings in the city of Cologne—one in an Iranian grocery store and the other in a Turkish neighborhood. The press coverage following these revelations highlighted the investigating authorities’ inabilities to name the perpetrators sooner (the last murder had occurred in 2007), as well as their incessant suspicions of people close to the victims and of the Turkish mafia, and years of delayed justice (Brandt et al., 2011; BBC News, 2017). The authorities were criticized for alleged institutional racism, their systematic and impermissible dismissal of the leads, and following the wrong leads for 13 years (Parallel report, 2015; Foreign Policy, 2017; Von der Behrens, 2018).

The chapter investigates whether the 2011 revelations induced fears of hostility and victimhood among Turkish immigrants and affected their social assimilation and wellbeing.<sup>45</sup> Using data from the German Socio-economic panel (SOEP), we first provide evidence that the 2011 revelations induced a rise in worries about xenophobia among Turkish immigrants in Germany, especially among those with higher consumption of newspapers and among those living in Bavaria, i.e. the very region where the NSU trial took place. By contrast, the 2011 revelations had no significant effect on immigrants' worries about general crime development in Germany. In other words, our findings are suggestive that Turkish immigrants become more fearful of hostility directed at them rather than the general crime level in their surroundings after the 2011 revelations.

The fear of hostility generated by violent events can have lasting effects on human behavior (Echebarria-Echabe and Fernández-Guede, 2006; Haddad, 2007; Berrebi and Klor, 2008; Goel, 2010; Gould and Klor, 2016; Schueller, 2016; Geys and Qari, 2017). It is evident that fears caused by the backlash to Islamist terrorist events have a great effect on Muslim minorities’ views about their assimilation into the host environment (Gould and Klor, 2016; Haddad, 2007; Elsayed and de Grip, 2017). Recent research discusses the link between Muslims subjected to hostility and Islamophobia and their radicalization and recruitment into Islamist terrorist groups (Knapton, 2014; Mitts, 2017). Therefore, this study examines whether the 2011 revelations reinforced the feeling of estrangement among Turkish immigrants in Germany and forced them

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<sup>43</sup> The federal prosecutor referred to the NSU as a “right-wing extremist group” in the arrest warrant dated November 13, 2011 (Federal prosecutor’s office, 2011).

<sup>44</sup> A notable exception includes a relatively recent contribution by Steinhardt (2018), who studied the impact of a series of anti-immigrant attacks in the early 1990s in West Germany on the subjective well-being, return intentions, and German language skills of Turkish immigrants.

<sup>45</sup> Following the theoretical model of ethnic identity proposed by Constant and Zimmermann (2008), social assimilation is defined as the full adaptation to the culture and beliefs of the host country by migrants to achieve an ethnic identification that is similar to that of natives. A migrant is assimilated if she expresses increasing identification with the host country.

to reevaluate their place in German society. To this end, respondents' self-identification as Germans and as foreigners living in Germany was considered.<sup>46</sup>

This empirical investigation shows that the 2011 revelations negatively impacted Turkish immigrants' self-identification as German. Previous research on minorities' social assimilation hints at the existence of a substantial gap between Turkish immigrants and other immigrants in Germany (Constant et al., 2006; Constant et al., 2012). Therefore, the findings suggesting a post-2011 decrease in the assimilation of Turkish immigrants indicates a further widening of this gap. Additionally, in the aftermath of the 2011 revelations, the results show that Turkish immigrants in Germany increased their bonding with their home country and were more likely to self-identify as foreigners. These findings emphasize the disruptive effects of the 2011 revelations. We also provide evidence that these revelations were followed by a significant reduction in Turkish immigrants' health and life satisfactions.

Overall, the main contribution of the chapter is to demonstrate that revelations about anti-immigrant biases in the justice system are able to trigger fears of hostility and victimization among immigrants. This result has potentially important implications for the contemporaneous rise in anti-immigration violence. It suggests that judicial delays to trials against anti-immigrants criminals can fuel the self-fulfilling prophecy of immigrants' estrangement. Second, this chapter seems to be the first to employ the matching difference-in-differences estimator (MDiD) in the context of the impact of terror events on social assimilation outcomes. The estimation strategy applied here is robust against selection on pertinent observable characteristics (demographic, economic, and migration-related characteristics) and time-invariant unobservables (such as general ability, ability to manage emotions, and the reason for migration). This estimation strategy was implemented to address the concern of finding an appropriate control group faced by other studies on the topic.

### **3.2 Background: NSU crimes and the cover-up**

On November 4, 2011, German police looking for clues after a bank robbery in the city of Eisenach found a link to a previously unknown German right-wing extremist group, the NSU.<sup>47</sup> In addition to committing 15 bank robberies, further investigations revealed that the NSU network was involved in the murders of 10

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<sup>46</sup> Studies show that immigrants' assimilation of the host identity has wider implications for their economic behavior (Constant and Zimmermann, 2008; Casey and Dustmann, 2010; Georgiadis and Manning, 2013) and for society's general welfare in general (Bernhard et al., 2006; Goette et al., 2006; and Charness et al., 2007).

<sup>47</sup> To show that this group was indeed previously unknown and that the news revelations were exogenous, figure 3.1 plots the Google trends of keyword searches used by German internet users. The plot shows that the keyword *Nationalsozialistischer Untergrund* (NSU) was not searched for at all prior to the 2011 revelations. Also, the keyword *Dönermorde* (a pejorative reference to these murders resulting from the unfounded suspicions about the role of the Turkish mafia) was not searched for much either.

individuals of mostly non-German ethnic origin—eight Turkish, one Greek, and one German—between the years 2000 and 2007 (Federal Prosecutor’s Office, 2011). Although the perpetrators originated from East Germany (the city of Zwickau), most of these murders were committed in seven different cities across West Germany—three in Nuremberg, two in Munich, and one each in Dortmund, Hamburg, Rostock, Heilbronn, and Kassel. Figure 3.2 shows the timeline and the geographical span of NSU crimes. The network is also held responsible for two bombings in 2001 and 2004 in ethnic parts of the city of Cologne (Oezay, 2012). In response to these revelations, the investigators made a total of five arrests (Europol, 2012, p. 28).

The press and public did not fail to notice that these crimes had remained unresolved for years, even though the last murder (of a German policewoman in Heilbronn) had been committed in 2007. They also did not fail to notice that most of the resolutions stemmed from accidentally acquired information. The extensive media coverage briefly highlighted many failures of the establishment by hinting at the cluelessness of those investigating the murders and shed light on their incessant suspicions of the Turkish mafia, as well as the families and friends of the murder victims (Brandt et al., 2011; BBC News, 2017). It later came out that in 2007, German authorities had invited the FBI to conduct an analysis on these murders. According to the secret memo obtained by Foreign Policy (2017), the FBI hinted at the possibility that the murders are connected and were possibly being carried out by German natives with hatred towards minorities resembling ethnic Turkish immigrants.<sup>48</sup> Nevertheless, the German authorities did not pursue any of the recommendations.

Few public apologies were made by the officials, and there is huge controversy in Germany about the fact that none of the investigating authorities faced criminal charges in the NSU trial. The trial lasted between May 6, 2013, and July 11, 2018, and is considered to be one of the longest, costliest, and most controversial trials in the history of modern Germany. A letter was sent by victims' lawyers and members of civil society to the UN Committee on the Elimination of Racial Discrimination (CERD), which blamed investigative agencies for institutional racism, their harassment during the investigation, and investigators' denial for their systematic and impermissible dismissal of the leads (Parallel report, 2015; Foreign Policy, 2017). The only research article published on NSU is the one by Von der Behrens (2018), which refers to the episode as an “unprecedented example of the close connection between the secret services and the neo-Nazi movement as well as the structural racism within law enforcement agencies, which led to the consistent blaming of ‘victim’ communities and hence the following of wrong leads for 13 years.”

Central to the public discourse is the concern that the revelations were internalized differently by the Turkish minorities and that they had an immediate yet deeper psychological impact on them (Spiegel Online January

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<sup>48</sup> According to Foreign Policy (2017), the FBI made the following two conclusions: 1) “The offender is specifically targeting Turkish-appearing individuals,” 2) and, “The offender identifies ‘targets’ by frequenting areas of Germany that have Turkish populations and looking for people ... who resemble ethnic Turks.”



13, 2012; Spiegel Online July 13, 2018). In other words, it is likely that Turkish immigrants viewed the failure of investigating authorities as a continuation of their historical maltreatment by German institutions. A poll conducted a month after the revelations underscores the possibility that the Turkish immigrants viewed the failure of investigating authorities as an intentional judicial cover-up. The poll finds that German residents of Turkish origin had lost trust in the German state. Around 55% of the respondents believed that the NSU was protected and even supported by the German State, whereas 33% reported to be convinced of “extreme” state support (SEK/POL-Data4U, 2012). Besides this descriptive evidence, however, no formal investigation unearthed the impact of the 2011 revelations on Turkish immigrants in Germany. This chapter sets out to bridge this gap in the literature by emphasizing the role of judicial delays in regard to past crimes against immigrants as an obstacle to their assimilation.

The theoretical underpinnings of the expected results are suggested in seminal literature investigating the effects of media representation of the event on public opinions (Heath, 1984). In particular, Iyengar and Simon (1993) suggest that the media’s coverage of the news in terms of its quantity and quality can frame readers’ opinions. As noted, in the case of the NSU revelations, the content of the news coverage had quickly turned from “an incident involving past crimes” into “evidence of a systematic injustice against the Turkish immigrants in Germany.” The coverage not only constituted episodic information involving the stories of authorities’ harassment of friends and families of the victims, but also made a broader assertion of the historical maltreatment of Turkish minorities residing in Germany. The facts that came into light attributed the causal responsibility of this injustice to German institutions without any delay. Following the theoretical reasoning emphasized in the emerging assimilation literature (Gould and Klor, 2016), this chapter asks the following two research questions: 1) Did the evidence of noncooperation of investigating authorities impact Turkish immigrants’ worries about future hostility directed at them? 2) Did these news revelations present an obstacle to the targeted group’s social assimilation into German culture?

### **3.3 Data**

The data used for this study originate from the German SOEP (GSOEP, v32.1). The SOEP is an extensive individual-level panel dataset from Germany that provides rich information on numerous demographic, economic, and migration-related characteristics of individuals. The analysis is restricted to individuals with a “migrant background,” including first-generation immigrants (FGIs) and second-generation immigrants (SGIs) in Germany.<sup>49</sup> The share of immigrants among the total population in East Germany is very low,

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<sup>49</sup> An important reason to restrict the sample to respondents with a migrant background is that the SOEP questions related to assimilation outcomes (self-identification outcomes) are asked to migrants only.

especially Turkish immigrants, and NSU crimes were mostly committed in West Germany. Therefore, the sample was restricted to West Germany only.

The sample period requires careful consideration of the European migrant crisis that developed in 2015 and of the exacerbation of anti-immigration sentiments in Germany. As shown in Table 3.1, Germany saw a massive increase in the number of asylum applications in 2014 and 2015 because of the devastating civil war in Syria. This inflow coincided with a steep rise in hate crimes and xenophobic attacks in Germany (see Table 3.1). Therefore, depending on the availability of the data on assimilation outcomes, the sample period is restricted to 2009-2014.<sup>50, 51</sup>

### **3.3.1 Definitions of treatment and control groups**

The treatment group of *Turkish immigrants* consists of immigrants who were born in Turkey or had at least one parent born in Turkey. The control group consists of all immigrants to Germany who did not originate from Turkey. To avoid comparing Turkish immigrants with immigrants from Middle-eastern and North African (MENA) countries, the control group is restricted to respondents from non-Turkish and non-MENA countries.<sup>52, 53, 54</sup>

### **3.3.2 Outcome variables**

Table 3.2 presents the definitions and statistical summary of outcome variables used for the investigation. Respondents' subjective worries about hostility to foreigners (#1) are captured by the survey question asking, "Are you worried about hostility to foreigners?" The response to this question ranges from 1 (not concerned at all) to 3 (very much concerned). The variable referred to as *worries about xenophobic hostility* is the main outcome of interest and it helps to identify the impact of 2011 revelations on Turkish respondents' worries about xenophobic hostility and victimhood.

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<sup>50</sup> The assimilation variables were first asked in the 2010 wave of surveys and were not included in all waves (see Table 3.2).

<sup>51</sup> Another criterion used for sample period restriction is keeping DiD symmetric around the treatment date. Chabé-Ferret (2015) shows that symmetric DiD is consistent in both cases when the selection bias is symmetric and asymmetric around the treatment date.

<sup>52</sup> In appendix A, the models are re-estimated using the following two alternative definitions of the control and treatment groups: 1) respondent's nationality (Turkish nationals vs. non-Turkish nationals), and 2) religious identity (Muslims vs. non-Muslims). The main results are robust against the choice of the definition.

<sup>53</sup> The omitted countries include Afghanistan, Algeria, Egypt, Iran, Iraq, Jordan, Kurdistan, Lebanon, Libya, Morocco, Palestine, Somalia, Syria, Tunisia, and Yemen. In the appendix G, the main results are re-estimated with an enlarged treatment group including MENA immigrants to show that the main message of the paper holds.

<sup>54</sup> One of the victims of the NSU murders was from Greece, a country that is currently being assumed to be a part of the control group. The results were re-estimated after dropping Greek immigrants from the sample, and the main estimates were virtually unchanged.

Another similarly defined question captures the respondent's subjective worries about general crime development in Germany and is referred to as *worries about crime development*. This outcome helps to distinguish whether the post-2011 increase in worries of Turkish immigrants in Germany was a response to the actual increase in violent crimes targeted against them or simply a change in their perception of the surrounding due to 2011 revelations. The survey questions asking respondents to report their worries (about both xenophobic hostility and crime development) were included annually in the SOEP questionnaire.

The self-identification outcomes (#3-5) are defined in Table 3.2. Following Angelini et al. (2015), these variables represent a direct measure of respondents' self-reported assimilation into the host culture and are strongly associated with individuals' subjective well-being. The survey question asking respondents to self-report their identification as German determines how strongly the respondent feels German. The responses range from 1 (not at all) to 5 (very much). Another similarly defined question asks respondents how strongly *Foreign* they feel in Germany. These questions were included inconsistently in the SOEP questionnaire. That is, the question on feeling German was included in the years 2010, 2012, and 2014, whereas that on feeling foreign was included in only 2010 and 2012. To make the results for feeling German comparable, another variable is used to report respondents' level of connectedness with their country of origin. Although similarly defined, this question was asked for the years 2010, 2012, and 2014.

The matching procedures for assimilation outcomes were performed separately because they are not included in the SOEP every year (the only pre-treatment year was 2010) and contain far more missing observations than the outcomes on respondent's worries.<sup>55</sup> Finally, the study looks at the impact of the 2011 revelations on health satisfaction and satisfaction with life among Turkish immigrants in Germany (outcomes 6 and 7). Both of these questions are asked annually and consist of individual responses ranging from 0 (very dissatisfied) to 10 (very satisfied).

### **3.4 Estimation strategy and matching quality**

#### **3.4.1 Estimation strategy**

To investigate the causal impact of the media's treatment of the 2011 revelations on targeted group's worries and social assimilation outcomes, this study implemented the matching difference-in-differences estimator (MDiD) first suggested by Heckman et al. (1997). The basic idea of the estimator is to estimate the causal effect of interest—the average treatment effect on the treatment group (ATT)—by applying a two-step procedure. In the first step, the propensity score matching technique is implemented to find the control group

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<sup>55</sup> This restriction is not crucial for the main message of the paper. Appendix D presents the main results when conditioned for pre-treatment worries and pre-treatment assimilation outcomes together. This substantially reduces the sample size, but the main results are qualitatively unchanged.

observations that are similar to the treatment group observations in all relevant pre-treatment characteristics.<sup>56</sup> The identification strategy requires the model to include all the variables that simultaneously influence the treatment assignment (Turkish immigrants or not) as well as the outcomes of interest (social worries and assimilation outcomes). Table 3.3 presents the list of conditional variables used in this step. These include respondents' demographic, economic, and migration-related characteristics. Another requirement is that these variables should not be affected by the treatment or by the respondent's anticipation of the treatment. To ensure this, a matching step is performed on the sample restricted to the pre-treatment years (Caliendo and Kopeinig, 2008, p. 38). To prevent comparison between treatment and control observations that are not comparable, the sample is restricted to the common support region.

In the second step, the difference-in-differences regressions are applied. The following regression equation is estimated:

$$y_{it} = \alpha_0 + \alpha_1 \text{Post2011}_t + \lambda \text{Post2011}_t * \text{Turks}_i + \beta' X_{it} + \gamma_i + \gamma_s + \gamma_t + u_{it}, \quad (3.1)$$

where  $y_{it}$  is the outcome variable of the respondent  $i$  in year  $t$ . The dummy variable  $\text{Post2011}_t$  is 1 if the observation is recorded after the 2011 revelations in Germany and 0 otherwise. The dummy variable  $\text{Turks}_i$  is 1 if the respondent belongs to the treatment group (Turkish immigrants) and 0 otherwise. The treatment effect of interest is captured by the coefficient  $\lambda$  on the interaction term ( $\text{Post2011}_t * \text{Turks}_i$ ).  $X_{it}$  is a vector of individual-level characteristics and includes all the variables used for conditioning. Additionally,  $X_{it}$  includes variables that are relevant for outcomes of interest but do not directly affect respondents' treatment status. These variables mainly include two annually collected state-level variables relevant to the study of worries and assimilation outcomes: immigrant share of the population and the number of right-wing violent crimes.<sup>57</sup>  $\gamma_i$  is an individual-specific fixed-effect.<sup>58</sup>  $\gamma_s$  and  $\gamma_t$  are state and year dummy variables, and  $u_{it}$  is the error term.

Initially, the treatment effect is assumed to be homogeneous across respondent's immigration statuses and education levels. Section 4.3 investigates whether the treatment effect is heterogeneous across respondent's immigration statuses (FGI vs. SGI), education (high education vs. low education), and religiousness (attends

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<sup>56</sup> The 1:1 nearest-neighbor caliper matching was implemented without replacement with the caliper set at 0.005. The program used is *psmatch2*, which was developed by Leuven and Sianesi (2003) on Stata 14.2. The results also hold when matching with replacement is implemented.

<sup>57</sup> These variables provide useful controls for changing socio-economic factors in contemporary Germany, as discussed in section 2.

<sup>58</sup> The baseline regressions are estimated using the fixed-effect estimator. For robustness, the appendix B presents the estimates with the random effects model and the OLS. The results are qualitatively similar.

religious services or not). Furthermore, treatment intensity checks were performed based on the respondents' state of residence and newspaper readership.

The crucial identifying assumption in estimating the treatment effect is that the outcome variables of both the treatment and control groups would follow similar trends in the absence of the 2011 revelations. This assumption is referred to as the common trend assumption (CTA). The analysis begins with an investigation of the plausibility of this assumption. Even if the CTA holds, the estimated ATT might be biased. One source of bias is that the control group observations were also affected by the 2011 revelations. That is, although the NSU group primarily targeted Turkish immigrants, its more general opposition to foreigners (particularly non-white immigrants) makes it likely that non-Turkish immigrants were also affected by the news treatment. In this case, the estimates presented are likely to understate the true effect of the 2011 treatment (i.e., downward bias).

An important threat to identification comes from the coarse sources of variation as potential explanations of the estimated effects, such as the 2011 Turkish general election and the mass migration of Syrians into Turkey as a result of the escalating Syrian Civil war between 2011 and 2012. Around 2014-15, the European migration crisis escalated. In response, xenophobic crimes steadily increased in Germany and coincided with the 2011 treatment, which might have played a confounding role in respondents' worsened social outcomes. These coarse sources are particularly concerning as there is no variation in the timing of the treatment, with all Turkish immigrants being treated at the same time. To address these concerns, the time dimension of the data is used to perform a number of validation tests.

Although the matching was performed on a number of observable characteristics, a crucial distinction between the groups is their ethnicity. This is particularly problematic if there are other shocks that vary by ethnicity or by unobserved characteristics that correlate with ethnicity. To address this issue, the main results were re-estimated after controlling for ethnicity-specific linear time trends.

#### ***3.4.2 Conditioning variables and the matching quality***

Table 3.3 presents a list of the 34 conditioning variables used for matching. Other conditioning variables not shown in Table 3.3 include dummy variables representing the respondents' state of residence and the pre-treatment survey years. Baseline outcome variables were also used as conditioning variables (pre-treatment worries about xenophobic hostility, worries about crime development, health satisfaction, and life satisfaction). The matching quality is generally assessed by comparing the means of the conditioning variables for the treatment and control observations after the matching process. Table 3.3 shows that the matching process improves the comparability of the sample means of the conditioning variables for the treatment and control groups.

To show statistically that the post-matching difference between the means is not too large, following Rosenbaum and Rubin (1985), the table includes the measure of standardized percentage bias (%SB). %SB is calculated twice (before and after the matching procedure) to show the improvement in the comparability between sample means achieved by matching. Caliendo and Kopeinig (2008) report that an after-matching %SB of less than 3% or 5% is often considered a sufficient indicator of good matching quality. For most of the conditioning variables, Table 3.3 shows that the achieved post-matching %SB is significantly lower than 5%.<sup>59</sup> Another indicator of matching quality is the post-matching reduction in mean and median %SB. The mean %SB for the selected variables is 2.6, which is a substantial reduction of 86% from the unmatched sample. The median %SB of 1.7 is also well within the acceptable level of 5%.

The matching quality of the sample consisting of assimilation outcomes (#3-5) is briefly discussed. Variable balance is achieved without conditioning for state dummy variables, survey year dummy variables, and work experience. The means of the conditioning variables for the treatment and the control groups are shown in the appendix E. The matching quality is greatly affected due to the low sample size, as denoted by the substantial increases in %SB.

### **3.5 Results and discussion**

#### ***3.5.1 2011 revelations and worries of Turkish immigrants in Germany***

The investigation begins with an analysis of respondents' worries (responses range from 1-3). Figure 3.3 shows the variation in worries about xenophobic hostility over time. The figure highlights the pre-treatment comparability of the control group (an indication of the matching quality) by demonstrating that the outcome trends between the treatment and control groups follow a similar path prior to the 2011 news treatment, which is evidence of nonexistent lead effects of the treatment. The figure also provides direct evidence of the existence of an effect associated with the 2011 revelations. Worries about xenophobic hostility increased for Turkish immigrants in Germany in 2012 (first post-treatment observation), whereas for non-Turkish immigrants, worries continued with their pre-treatment trend. Finally, the figure shows that the increase in worries about xenophobic hostility post-2011 did not dissipate as the years passed by (lag effects). The strength of the magnitude weakens slightly for 2013 but rises again in 2014.

Unlike findings in figure 3.3, figure 3.4 does not show any statistically significant divergence in worries towards general crime development in Germany among the treatment group.<sup>60</sup> Taken together the two

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<sup>59</sup> The %SB is larger than 5% for the following variables: married, duration since migration medium and longer, and life satisfaction.

<sup>60</sup> It is difficult to establish whether the CTA holds for this outcome due to its imprecise estimation. Therefore, in the appendix F, matching is performed separately for this outcome. Although the coefficients are again imprecisely estimated, the CTA holds better, and the main message is unchanged.

Figures are suggestive that Turkish immigrants were significantly more fearful of xenophobic hostility directed at them rather than the general crime level in their surroundings after the 2011 revelations.

To take one step further, Table 3.4 presents the DiD estimates of the "treatment" effect on worries about xenophobic hostility.<sup>61</sup> The first column of the Table suggests that in the aftermath of the 2011 revelations, worries about xenophobic hostility were increased among Turkish immigrants by 0.152, which is about 7.3 percent of the mean and 20.8 percent of one within-individual standard deviation in the estimated sample.<sup>62</sup>

After it was uncovered, the NSU episode was featured extensively in German newspapers. Building on SOEP question about newspaper reading, column 2 and 3 of Table 3.4 look at whether the impact of the 2011 revelations was different among on newspapers' readers and non-readers. Consistent with the literature about the role of newspapers (Heath, 1984), the regression results suggest that newspapers readership was actually associated with stronger effects of 2011 revelations.<sup>63</sup>

Columns 4-6 present the baseline results for respondents who report reading only foreign newspapers, respondents who read only German newspapers, and respondents who read both. Although the coefficients are estimated with less precision due to low sample sizes, the magnitudes increase from left to right.<sup>64</sup> The main result of column 4 suggests a rather limited treatment effect among the readers of foreign newspapers, which understates the role of Turkish newspapers' coverage of the NSU episode in intensifying the treatment. Column 6 shows that respondents who read both German and foreign newspapers (a proxy for higher consumption of news) report statistically significant treatment effects with larger magnitude than the average effect.

The geographical span of NSU crimes (figure 3.2) also offers another opportunity for a treatment intensity check. As mentioned, five of the 10 murders were committed in the state of Bavaria alone. Additionally, the seven-year-long NSU trial was held in Munich, Bavaria. Thus, it may be expected that the NSU episode received more extensive and relatively frequent news coverage in Bavaria than other states in Germany and that the treatment could have been particularly intense among the respondents from this area. Panel B of

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<sup>61</sup> To show that the baseline estimates do not depend on the inclusion of control variables, appendix H, presents the estimates without them. The results do not change. Additionally, Table 3.A.5 in the supplementary appendix presents the simple means of the outcomes variables across survey years.

<sup>62</sup> The estimated treatment effect and the CTA are not conditional on the implementation of the matching procedure. Appendix C presents the lead and lag effects of the 2011 revelations for the unmatched sample. The main message of the paper holds.

<sup>63</sup> The role of other media platforms with which respondents acquire information could also be interesting, e.g., internet use and time spent watching TV. Unfortunately, however, the information on respondents' private use of the internet was asked in only the year 2013, i.e., post-treatment year, and the TV watching habits have not been recorded since 1989.

<sup>64</sup> Although the sample sizes for the sub-group analysis presented in columns 3-5 are small, the coefficients presented in column 5 are statistically significant. Unfortunately, less precise estimation due to lower sample sizes makes it difficult to establish whether the coefficients in columns 3-5 are indeed statistically different.

Table 3.4 shows the re-estimated results that were obtained by restricting the sample to respondents from Bavaria. The estimates show that this subpopulation reported a much larger increase in their worries towards xenophobic hostility than the average effect, hence supporting the hypothesis.

Finally, we also checked whether a number of individual-level characteristics are important considerations for the heterogeneity of the treatment effect. In particular, respondent's immigration status (FGI vs. SGI), education (high-educated vs. low educated) and religiosity (religious vs. non-religious) are considered.<sup>65</sup>

Although the results are imprecisely estimated and have large standard errors, Table 3.A.14 in the supplementary appendix shows that we cannot reject the null hypothesis that the treatment effect was homogeneous across the respondent's immigration status, education and religiousness.

### ***3.5.2 2011 revelations and social assimilation of Turkish immigrants in Germany***

Panel A of Table 3.5 presents the results for assimilation outcomes (responses range from 1 to 5). The results in column 1 suggest that Turkish immigrants were less likely to self-identify as Germans in the aftermath of the 2011 revelations. In terms of magnitude, the decrease in self-identification as German for Turkish immigrants is substantial at about 17 percent of the mean and 41 percent of one within-individual standard deviation in the estimated sample. The results in columns 2 and 3 show that Turkish immigrants substantially increased their self-identification as foreigners living in Germany and their connection with their country of origin. The event-analysis graphs in figures 3.5-3.7 present additional supporting evidence. Thus, these results conclusively highlight the impact of dissimilation by the 2011 revelations on Turkish immigrants in Germany.

Panel B of Table 3.5 shows the results regarding whether the revelations had a negative impact on respondents' health satisfaction and life satisfaction. The results show that the revelations negatively impacted these factors. In terms of magnitudes, the decreases in health and life satisfaction were about 10 and 6 percent of one within-individual standard deviation, respectively.<sup>66</sup> Although not very large, these decreases highlight the relevance of the revelations for the wellbeing of the Turkish Diaspora in Germany.

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<sup>65</sup> Information on the country of birth of SGI respondents' parents is not available for all respondents. In case where the country of origin was missing for both parents, observations were assumed to belong to the control group. We checked that we obtain similar results when we omit SGI respondents for which the country of origin is missing or when we focus on the FGI alone (see Table 3.A.15).

<sup>66</sup> Steinhardt (2018) finds that the rise in xenophobic violence in the 1990s reduced the subjective wellbeing of Turkish immigrants by approximately 0.36 points, which is about 5% of the mean and 19% of the standard deviation in the present estimation sample. In contrast, the results presented here are smaller in magnitude. This is not surprising, however, as Steinhardt considers the case of actual violent incidents, whereas the present study focuses on the impact of news revelations about the crimes committed in the past.



Particularly, the results related to health satisfaction provide evidence of increased stress levels and negative health consequences of the 2011 revelations.

### ***3.5.3 Additional robustness checks***

To address the concern of ethnicity-specific shocks, the baseline results were re-estimated after controlling for ethnicity-specific linear time trends. In addition to controlling for Turkish immigrants' specific time trends, the linear time trends were controlled for the following major ethnic groups in Germany: 1) Central and Eastern European immigrants, 2) European migrants, and 3) other ethnic groups. Panel A of Table 3.A.15 in the supplementary appendix presents the main results, which are robust to the inclusion of ethnicity-specific time trends.

Eventually, we checked that the 2011 revelations did not coincide with any significant change in immigrants' labor market outcomes, as measured by hourly wages or unemployment (see Table 3.A.16 in the supplementary appendix). Our baseline results cannot be interpreted as reflecting immigrants' increased economic problems.

## **3.6 Conclusion**

Many European countries have suffered violent Islamist terrorist attacks since the dawn of the 21st century. Given that the majority of the perpetrators of these attacks were homegrown individuals belonging to the Islamic religion, the question of the social assimilation of Muslims living in the West has come to the forefront of policy discussions. In response, a number of economic studies have investigated the impact of the backlash induced by Islamist terror events on the attitudes of Muslim minorities towards assimilation in the host society. Uniquely, this chapter contributes to the literature by focusing on the impact of unprovoked right-wing crimes targeted against Islamic immigrants. Particularly, the focus was on an episode of 2011 news revelations of the past crimes committed by the right-wing group NSU against Turkish immigrants in Germany.

Although the NSU crimes are widely believed to be xenophobic crimes, this chapter provided the first formal evidence that the 2011 revelations impacted Turkish immigrants distinctly from other immigrants. Using German longitudinal data, the results showed that Turkish immigrants in Germany reported an increase in worries about xenophobic hostility in the aftermath of the 2011 revelations, while their worries about general crime development were not affected as much. The results further show that the revelations caused deterioration of the social assimilation outcomes. In particular, Turkish immigrants were less likely to self-identify as Germans and more likely to feel closer and better bonded to their home countries. There was also evidence of reduced health and life satisfaction. These results are in line with the concerns raised by

newspapers that the NSU revelations were internalized differently by the Turkish minorities and that they had an immediate and deeper psychological impact on them (Spiegel Online January 13, 2012; Spiegel Online July 13, 2018).

These results have pertinent implications for the immigration policies in the developed world. In 2016 alone, with the arrival of more than one million asylum seekers from war-torn countries, the German government spent 5.5 billion Euros on assisting migrants (Deutsche Welle, 2017). Of this amount, 2 billion Euros were spent on a package designed to integrate refugees into the German culture and to teach them the language. However, the arrival of the refugees coincided with a steep rise in xenophobic violence in Germany.

The findings highlight the disruptive effects of fears triggered by right-wing anti-immigrant violence. In particular, the fears of hostility and victimhood induced by these attacks raised assimilation costs and caused deterioration of assimilation outcomes of the targeted minorities. Timely prevention and quick, just resolution of crimes against immigrants could improve the efficiency and effectiveness of the money spent on integration and assimilation policies. Although the study used data collected for Germany, the results could be highly relevant for any future research on the impact of violence targeted against minority groups in other countries.

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## Appendix

**Table 3.1: Summary of contemporary migration in Germany**

| Variables                                     | Type    | 2009   | 2010   | 2011   | 2012   | 2013    | 2014    | 2015    |
|---|---------|--------|--------|--------|--------|---------|---------|---------|
| Asylum Applicants (#s)                        |         | 32,910 | 48,475 | 53,235 | 77,485 | 126,705 | 202,645 | 476,510 |
| <b>Criminal incidents (country aggregate)</b> |         |        |        |        |        |         |         |         |
| Hate crimes                                   | All     | 4583   | 3770   | 4040   | 4514   | 4747    | 5858    | 10373   |
|   | Violent | 590    | 467    | 528    | 524    | 608     | 707     | 1151    |
| Xenophobic incidents                          | All     | 2564   | 2166   | 2528   | 2922   | 3248    | 3945    | 8529    |
|   | Violent | 383    | 308    | 373    | 415    | 494     | 554     | 975     |
| Anti-semitic incidents                        | All     | 1690   | 1268   | 1239   | 1374   | 1275    | 1596    | 1366    |
|   | Violent | 41     | 37     | 29     | 41     | 51      | 45      | 36      |
| Incidents of Racism                           | All     | 428    | 433    | 484    | 584    | 608     | 807     | 1214    |
|   | Violent | 70     | 64     | 71     | 98     | 123     | 141     | 174     |
| <b>State-level variables</b>                  |         |        |        |        |        |         |         |         |
| Immigrant share of total population (in %)    |         | 7.76   | 7.83   | 6.81   | 7.13   | 7.53    | 8.11    | 9.34    |
| Log (# of reported Rightwing violent crimes)  |         | 3.77   | 3.53   | 3.51   | 3.55   | 3.45    | 3.50    | 4.07    |

Notes: The data on criminal incidents such as hate crimes, xenophobic incidents, Anti-Semitic incidents, racist incidents and rightwing violent crimes are a country level data and obtained from the website of Federal Ministry of Interior. Web link here:

<http://www.bmi.bund.de/SharedDocs/Downloads/DE/Nachrichten/Pressemitteilungen/2016/05/pmk-2015-hasskriminalitaet-2001-2015.html>. The information on immigration share of total population is a state-level variable and obtained from <https://www.destatis.de/DE/Startseite.html>. The number of reported rightwing violent crimes is a state-level variable.

**Table 3.2: Definitions and summary of outcome variables**  
(period: 2009-2014)

| #  | Definition of the outcome variable                       | Range of responses                          | Mean             |
|--|--|---|------------------|
| <b>a. Worries (all years)</b>  |  |   |                  |
| 1  | Worried About Hostility To Foreigners<br>(Hostility)     | 1(No concerns at all)–3(Very concerned)     | 1.903<br>(0.708) |
| 2  | Worried About Crime Development in Germany<br>(Crime)    | 1(No concerns at all)–3 (Very concerned)    | 2.139<br>(0.700) |
| <b>b. Self-identification (asked in survey years 2010, 2012, 2014)</b> |  |   |                  |
| 3  | How strongly German the respondent feels (Feel German)   | 1(Not at all)–5(Completely)                 | 3.612<br>(1.120) |
| 4  | How strongly Foreign the respondent feels (Feel Foreign) | 1(Not at all)–5(Completely)                 | 3.324<br>(1.320) |
| 5  | Connected with the country of origin (Connect)           | 1(Not at all)–5(Completely)                 | 3.179<br>(1.253) |
| <b>c. Health and life satisfaction (all years)</b>                     |  |   |                  |
| 6  | Health satisfaction (hsat)                               | 0(Compl. dissatisfied)–10(Compl. satisfied) | 6.947<br>(2.241) |
| 7  | Overall Life satisfaction (Life Sat)                     | 0(Compl. dissatisfied)–10(Compl. satisfied) | 7.308<br>(1.774) |

Note: This table provides definitions and summary statistics of dependent variables used in the study. Panel (a) lists the respondent’s worries about hostility to foreigners and worries general crime development in Germany. Panel (b) lists the respondent’s self-identification as a feeling of closeness to Germany, connectedness with the home country, and self-identification as feel closer to the home country. Panel (c) summarizes the respondent’s health satisfaction and overall life satisfaction. The variables in panel (a) and (c) are annually collected. The self-identification questions were asked to individuals with ”migrant background” only, i.e. German natives were not asked these questions, and were inconsistently included in the survey. For example, questions 3 and 4 were asked in 2010, 2012 and 2014, whereas, question 5 was asked only in the years 2010 and 2012, i.e. pre- and post-treatment.

**Table 3.3: Means of conditioning variables of treated, controlled  
and matched controls (pre-treatment)**

| Variables                                   | Matching<br>Status | Means   |         | %bias | % red.<br>in bias |
|---|--------------------|---------|---------|-------|-------------------|
|   |                    | Treated | Control |       |                   |
| <b>A. Demographic characteristics</b>       |                    |         |         |       |                   |
| Age   | Unmatched          | 42.639  | 46.837  | -28.1 |                   |
|   | Matched            | 42.582  | 42.458  | 0.8   | 97.0              |
| SGI   | Unmatched          | 14.756  | 45.084  | -70.2 |                   |
|   | Matched            | 16.444  | 18.222  | -4.1  | 94.1              |
| Rural                                       | Unmatched          | 87.537  | 78.966  | 23.1  |                   |
|   | Matched            | 86.778  | 86.111  | 1.8   | 92.2              |
| Female                                      | Unmatched          | 48.853  | 55.389  | -13.1 |                   |
|   | Matched            | 48.778  | 49.778  | -2.0  | 84.7              |
| Married                                     | Unmatched          | 80.758  | 64.598  | 36.9  |                   |
|   | Matched            | 79.556  | 77.111  | 5.6   | 84.9              |
| Divorced                                    | Unmatched          | 07.478  | 10.692  | -11.2 |                   |
|   | Matched            | 07.556  | 08.000  | -1.5  | 86.2              |
| Disabled                                    | Unmatched          | 01.903  | 01.897  | 2.1   |                   |
|   | Matched            | 01.908  | 01.907  | 0.4   | 82.1              |
| <b>B. Economic characteristics</b>          |                    |         |         |       |                   |
| Education                                   | Unmatched          | 10.000  | 11.81   | -74.1 |                   |
|   | Matched            | 10.163  | 10.227  | -2.6  | 96.5              |
| Work experience                             | Unmatched          | 14.413  | 18.753  | -34.7 |                   |
|   | Matched            | 14.782  | 14.241  | 4.3   | 87.5              |
| Log HH income                               | Unmatched          | 07.655  | 07.772  | -22.7 |                   |
|   | Matched            | 07.662  | 07.667  | -1.1  | 95.4              |
| Job type: Medium skilled                    | Unmatched          | 12.762  | 20.984  | -22.1 |                   |
|   | Matched            | 13.889  | 12.667  | 3.3   | 85.1              |
| Job type: High skilled                      | Unmatched          | 02.393  | 09.321  | -29.8 |                   |
|   | Matched            | 02.667  | 02.333  | 1.4   | 95.2              |
| Owns the house                              | Unmatched          | 32.901  | 43.489  | -21.9 |                   |
|   | Matched            | 33.889  | 35.556  | -3.4  | 84.3              |
| <b>C. Migration-related characteristics</b> |                    |         |         |       |                   |
| Oral German: very good                      | Unmatched          | 47.557  | 37.134  | 21.2  |                   |
|   | Matched            | 46.889  | 46.444  | 0.9   | 95.7              |



|                                  |           |        |        |       |      |
|----------------------------------|-----------|--------|--------|-------|------|
| Written German: very good        | Unmatched | 38.285 | 31.389 | 14.5  |      |
|                                  | Matched   | 37.333 | 36.667 | 1.4   | 90.3 |
| HH relation: Head                | Unmatched | 50.548 | 56.910 | -12.8 |      |
|                                  | Matched   | 51.111 | 51.778 | -1.3  | 89.5 |
| Stay since migration: Medium     | Unmatched | 19.840 | 24.199 | -10.5 |      |
|                                  | Matched   | 22.000 | 18.667 | 8.1   | 23.5 |
| Stay since migration: Long       | Unmatched | 78.365 | 73.520 | 11.3  |      |
|                                  | Matched   | 76.000 | 80.000 | -9.4  | 17.4 |
| <b>D. Pre-treatment outcomes</b> |           |        |        |       |      |
| Worries xenophobic hostility     | Unmatched | 02.123 | 01.936 | 26.2  |      |
|                                  | Matched   | 02.074 | 02.082 | -1.1  | 95.8 |
| Worries crime development        | Unmatched | 02.261 | 02.166 | 13.9  |      |
|                                  | Matched   | 02.233 | 02.241 | -1.1  | 91.9 |
| Health satisfaction              | Unmatched | 06.547 | 06.821 | -11.9 |      |
|                                  | Matched   | 06.600 | 06.649 | -2.1  | 82.2 |
| Life satisfaction                | Unmatched | 06.757 | 07.160 | -22.3 |      |
|                                  | Matched   | 06.821 | 06.953 | -7.3  | 67.2 |

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|  |           |     |     |      |
|--|-----------|-----|-----|------|
| <b>Individual-year observations (NT)</b> |           | 900 | 900 |      |
| <b>Mean Bias</b>                         | Unmatched |     |     | 18.9 |
|  | Matched   |     |     | 2.6  |
| <b>Median Bias</b>                       | Unmatched |     |     | 13.5 |
|  | Matched   |     |     | 1.7  |

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Source: SOEP v32.1 2009-2011, unbalanced panel, own calculations.

Notes: This table provides the means and % standardized bias of the conditioning variables used for matching procedure (before and after the matching). The first two columns present the means of the conditioning variables separately for Turkish and non-Turkish immigrants in Germany. The next two columns present the % standardized bias and % reduction in %SB achieved as a result of matching. Means of the dummy variables are displayed in % terms. Other conditioning variables not shown here include dummies representing survey years and states. The share of treated off common support is 0.061.

**Table 3.4: 2011 news treatment and worries about xenophobic hostility  
of Turkish immigrants**

|  | Avg. effect         |  | Treatment intensity checks      |                        |                       |                    | B. Bavaria<br>(7)<br>Restricted<br>Sample |
|--|---------------------|--|---------------------------------|------------------------|-----------------------|--------------------|---|
|  | (1)<br>All sample   | (2)<br>Do not<br>read any<br>newspap<br>er | A. Newspaper readership         |                        | (6)<br>Both           |                    |   |
|  |                     |  | (3)<br>Reads a<br>Newspap<br>er | (4)<br>Only<br>Foreign | (5)<br>Only<br>German |                    |   |
| Turks*Post2011                                       | 0.152***<br>(0.046) | 0.090<br>(0.331)                           | 0.163***<br>(0.049)             | 0.0691<br>(0.205)      | 0.111<br>(0.083)      | 0.300**<br>(0.114) | 0.573***<br>(0.156)                       |
| Individual-year                                      | 3,458               | 274  | 2,230                           | 306                    | 1,341                 | 583                | 475                                       |
| Number of individuals (N)                            | 1,287               | 105  | 668                             | 108                    | 450                   | 196                | 180                                       |
| Pre-treatment Mean and<br>sd of the outcome variable | 2.078<br>(0.731)    | 1.896<br>(0.746)                           | 2.057<br>(0.729)                | 2.015<br>(0.749)       | 2.035<br>(0.737)      | 2.120<br>(0.699)   | 2.133<br>(0.730)                          |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the results for the analysis of the impact of 2011 revelations on respondents' worries about hostility to foreigners. The dummy variable Post2011 takes the value of 1 if the observation was recorded post 11<sup>th</sup> November 2011 and 0 otherwise. The analysis presented in columns (2)-(7) emphasizes the intensity of the treatment of 2011 revelations. Column (2)-(3) report the results for the respondents who report not reading a newspaper and the ones who do. In columns (4)-(6), separate estimates are shown for respondents who report reading foreign newspapers, German newspapers, and both newspapers, respectively. The baseline results are re-estimated in column (7) separately for Bavaria because half of the murders (5 out of 10) were committed in this state alone. Control variables include all the conditioning variables shown in Table 3.3 and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. A third-order polynomial is used for the control variable age, whereas, second-order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

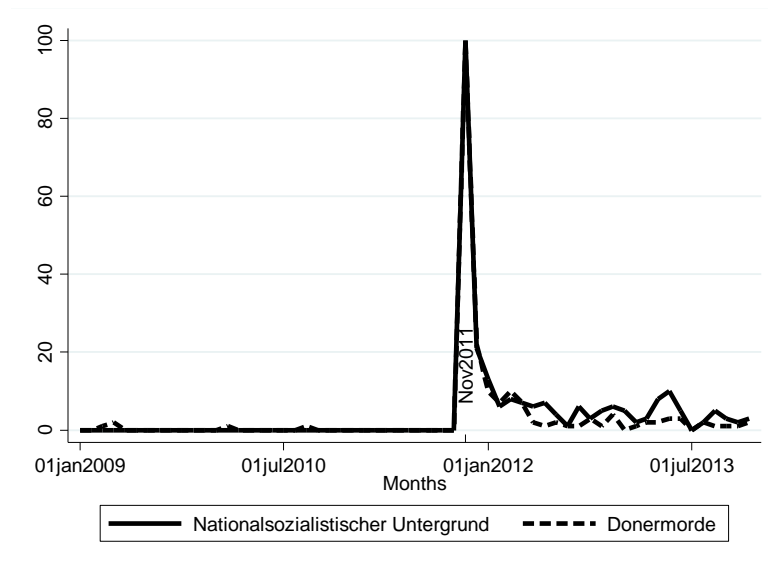
**Table 3.5: 2011 news treatment and social assimilation and welfare  
of Turkish immigrants**

|  | (1)                             | (2)                | (3)                             | (4)                  | (5)                    |
|--|---------------------------------|--------------------|---------------------------------|----------------------|------------------------|
|  | A. Social Assimilation outcomes |                    |                                 | B. Welfare outcomes  |                        |
|  | Feel<br>German                  | Feel<br>Foreign    | Connected<br>to home<br>country | Life<br>satisfaction | Health<br>Satisfaction |
| Turks*Post2011                                       | -0.454***<br>(0.139)            | 0.415**<br>(0.195) | 0.207*<br>(0.119)               | -0.110<br>(0.096)    | -0.235**<br>(0.109)    |
| NT   | 774                             | 561                | 779                             | 4,381                | 4,385                  |
| N  | 374                             | 374                | 374                             | 1,287                | 1,287                  |
| Pre-treatment Mean and sd of<br>the outcome variable | 2.650<br>(1.105)                | 3.540<br>(1.226)   | 3.644<br>(1.022)                | 7.011<br>(1.878)     | 6.709<br>(2.334)       |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the results of the analysis of the impact of 2011 revelations on respondents' self-identification variables and welfare outcomes. Control variables for results shown in Panel A include all the conditioning variables shown in the appendix 3.E and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. For the results shown in panel B, all the conditioning variables shown in Table 3.3 and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes are included. A third-order polynomial is used for the control variable age, whereas, second-order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

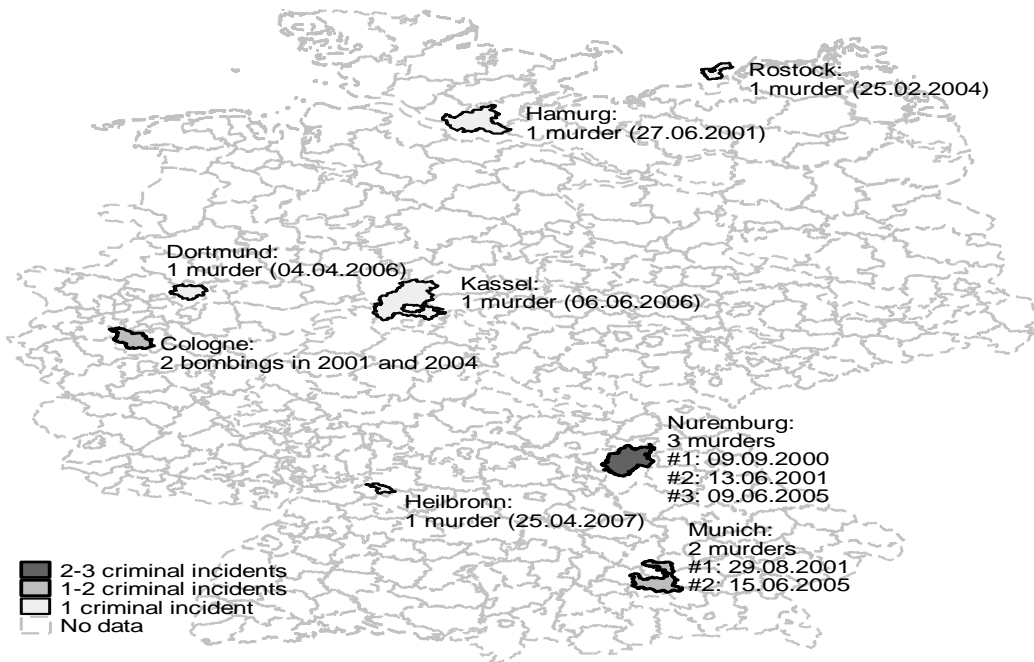
**Figure 3.1: Google trends of keywords search**



Source: Google trends, own calculations.

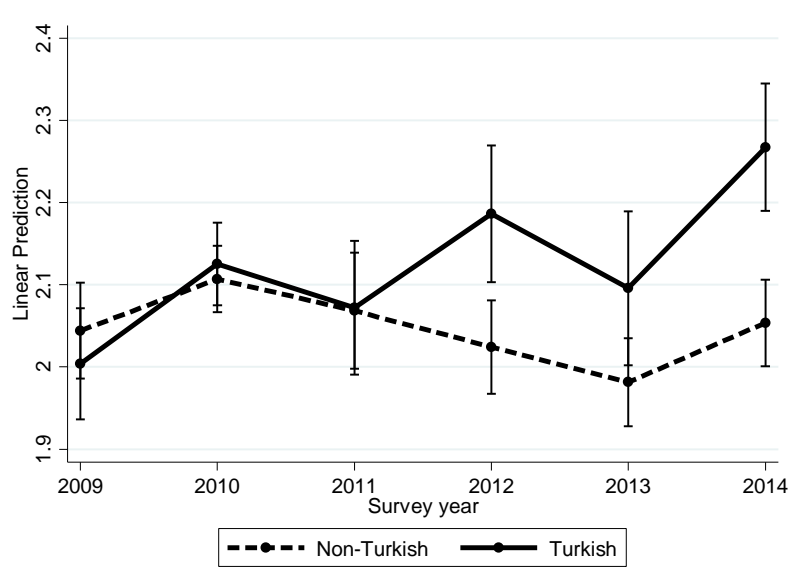
Notes: The figure plots the results of Google trends depicting the number of individual Google searches involving keywords NSU and Donermorde.

**Figure 3.2: Geographical spread of NSU crimes in Germany**



Notes: This figure shows the geographical location and the dates for crimes committed by the NSU network. Only violent crimes are shown.

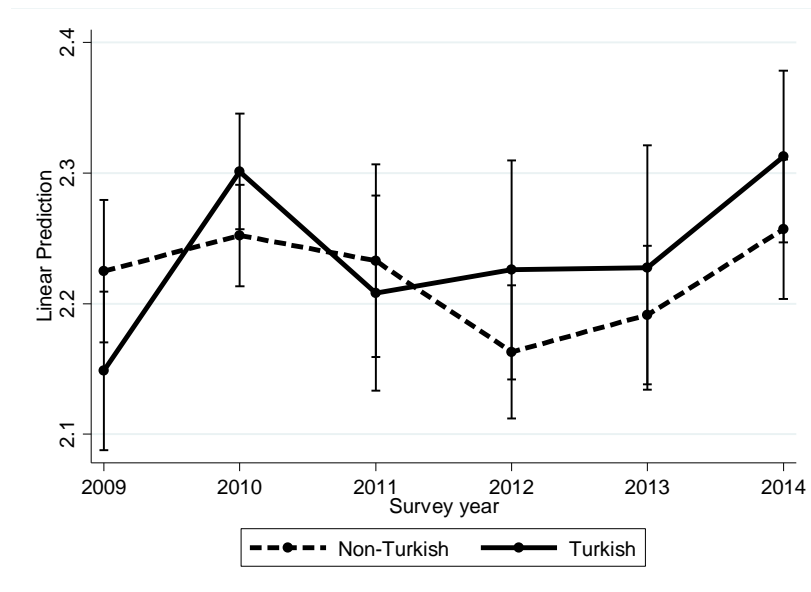
**Figure 3.3: Evolution of worries about xenophobic hostility (scaled 1-3)**



Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: The figure plots the predicted responses of respondent's worries about xenophobic hostility. The responses range from 1 (not worried)-3(very much worried).

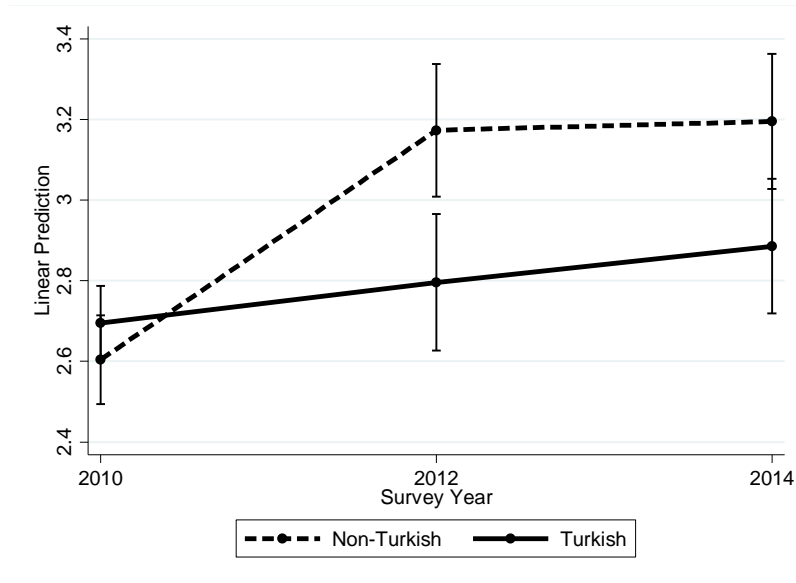
**Figure 3.4: Evolution of worries about crime development (scaled 1-3)**



Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: The figure plots the predicted responses of respondent's worries about crime development. They responses range from 1(not worried)-3(very much worried).

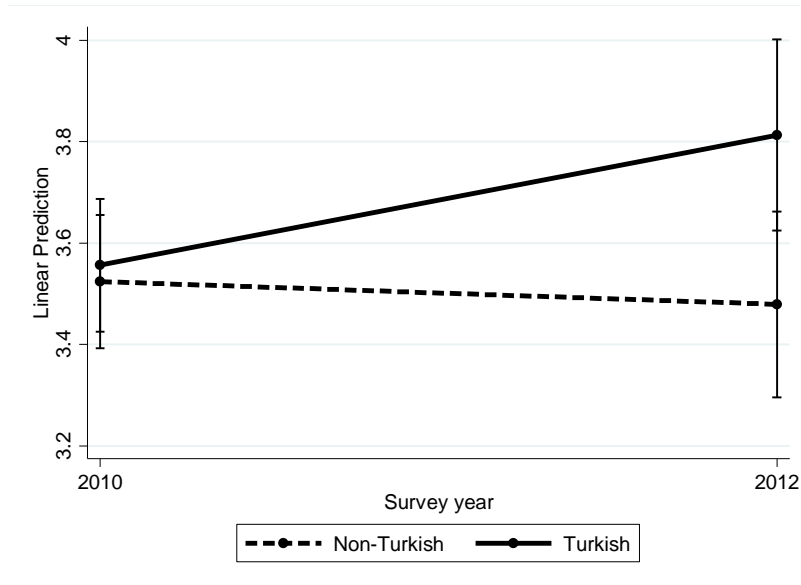
**Figure 3.5: Evolution of feel German (scaled 1-5)**



Source: SOEP v32.1. Survey years include 2010, 2012, and 2014. Unbalanced panel, own calculations.

Notes: The figure plots the predicted responses of respondent's self-identification as German. The responses range from 1(Not at all) to 5(Completely).

**Figure 3.6: Evolution of feel foreign in Germany (scaled 1-5)**

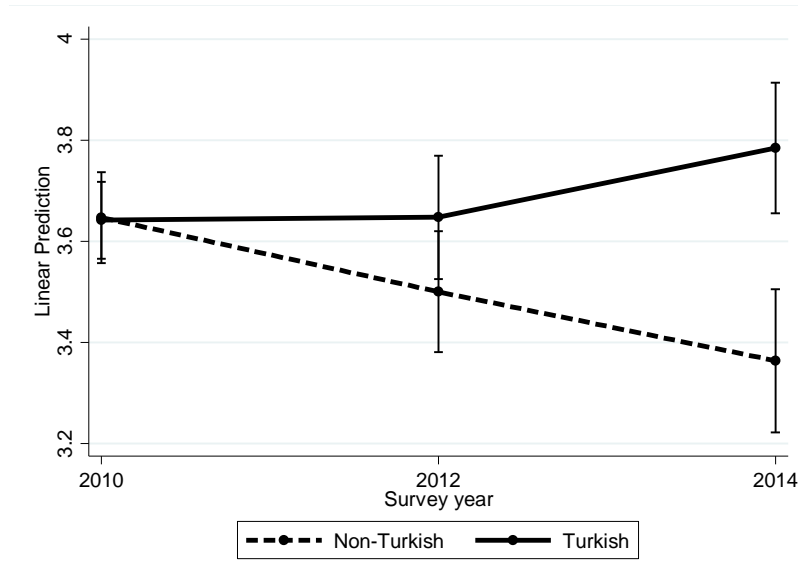


Source: SOEP v32.1. Survey years include 2010, and 2012. Unbalanced panel, own calculations.

Notes: The figure plots the predicted responses of respondent's self-identification as a foreigner living in Germany. The responses range from 1(Not at all) to 5(Completely).



**Figure 3.7: Evolution of connected to home country (scaled 1-5)**



Source: SOEP v32.1. Survey years include 2010, 2012, and 2014. Unbalanced panel, own calculations.

Notes: The figure plots the predicted responses of respondent's self-reported connectedness to his/her home country. The responses range from 1(Not at all) to 5(Completely).

## Supplementary appendix

### *Appendix A: Alternative definitions of the experimental setup*

Existing literature studying the impact of terror attacks on migrants' outcomes has used several definitions of the treated group. In addition to the information on respondent's country of origin, the literature uses the following two definitions: respondent's nationality (Cornelissen and Jirjahn 2012), and her religion (Cornelissen and Jirjahn 2012). In this appendix, I show the results for these alternative definitions of the experimental setup.

#### **Definition 1: Muslims vs. non-Muslims (Model A)**

The SOEP includes information on respondent's religious belonging. As the majority of Muslims in Germany originate from Turkey and the surrounding region, I exploit this time-invariant information to make use of another definition of the treated group "Muslim".<sup>67</sup> The dummy Muslim is constructed by using the survey question asking respondents to self-report their religious belonging. In response, individuals can report whether they belong to Catholic or Protestant or no-religion or to the Islamic faith. With this information, I generate a "Muslim" dummy variable indicating 1 if the individual self-reported to belong to the Islamic faith and zero otherwise. This survey question was not asked annually and hence, I make use of a number of SOEP survey waves, 2007, 2011, 2013 and 2015. However, it is possible that the treated indicator Muslim may have a measurement problem as individuals may not readily self-report their religious belonging. I avoid matching Muslims with immigrants originating from countries where the dominant religion is Islam by omitting the non-Muslim respondents who report originating from predominantly Islamic countries.<sup>68</sup> Thus, I restrict the control group to non-Muslim immigrants originating from non-Islamic countries (Model A). In Table 3.A.1 and 3.A.2, I report a comparison of means of important conditioning variables between treated and control groups. Table 3.A.3 reports the results and I confirm that they are qualitatively similar to the ones reported in the chapter.

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<sup>67</sup> The assumption that the respondent's religious belonging is a time-invariant characteristic can be tested for robustness. I confirm whether results are robust to this assumption by removing the respondents who irregularly report their religious belonging as Islamic across survey waves from the sample and re-estimate the main results of the paper. The results can be made available upon request.

<sup>68</sup> The countries where the dominant religion is Islam include MENA countries listed in the paper. In addition, following Central Asian, Asian, and African countries are included as pre-dominantly Islamic countries: Indonesia, Bangladesh, Kazakhstan, Albania, Tajikistan, Somalia, Pakistan, Uzbekistan, Bosnia/Herzegovina, Macedonia, Azerbaijan, Kosovo and Turkmenistan.

**Definition 2: Turkish nationals vs. non-Turkish nationals (Model B)**

The SOEP also includes a question asking respondents information on their nationality. In response, respondents report their preferred nationality. I construct the treated group indicator *Turk\_nat* if the respondent reports to be a Turkish national and zero otherwise. The control group is again restricted to immigrants who report to be nationals of non-MENA countries and also, are not German nationals (Model B). Tables 3.A.1 and 3.A.2 report the comparison of means of conditioning variables between treated and control groups and Table 3.A.3 reports the main results and I confirm that they are qualitatively similar to the ones reported in the chapter.

**Table 3.A.1: Means of conditioning variables I (pre-treatment)**

| Variables                | Model A                 |         |       | Model B                         |         |       |
|--------------------------|-------------------------|---------|-------|---------------------------------|---------|-------|
|                          | Muslims vs. non-Muslims |         |       | Turkish nat. vs non-Turkish nat |         |       |
|                          | Treated                 | Control | %bias | Treated                         | Control | %bias |
| Age                      | 41.648                  | 40.876  | 5.1   | 42.928                          | 42.977  | -0.3  |
| SGI                      | 27.359                  | 26.926  | 0.9   | 23.509                          | 23.684  | -0.4  |
| Rural                    | 89.351                  | 91.602  | -6.3  | 88.596                          | 90.000  | -4.1  |
| Female                   | 48.745                  | 48.831  | -0.2  | 49.123                          | 49.474  | -0.7  |
| Married                  | 74.719                  | 71.775  | 6.5   | 79.649                          | 78.596  | 2.5   |
| Divorced                 | 08.398                  | 08.312  | 0.3   | 06.316                          | 05.789  | 2.0   |
| Disabled                 | 01.903                  | 01.910  | -2.3  | 01.930                          | 01.928  | 0.7   |
| Education                | 10.394                  | 10.480  | -3.5  | 9.9368                          | 9.8956  | 1.8   |
| Work experience          | 13.650                  | 13.155  | 4.0   | 14.800                          | 14.426  | 3.0   |
| Ln HH income             | 07.668                  | 07.649  | 3.6   | 07.647                          | 07.616  | 5.7   |
| Job type: Medium skilled | 15.931                  | 15.671  | 0.7   | 14.386                          | 13.509  | 2.6   |
| Job type: High skilled   | 03.203                  | 04.156  | -3.9  | 01.404                          | 01.404  | 0.0   |
| Owens the house          | 30.736                  | 29.784  | 2.0   | 32.105                          | 31.404  | 1.5   |
| Oral German: v. good     | 56.537                  | 58.874  | -4.8  | 51.754                          | 48.246  | 7.0   |
| Written German: v. good  | 46.753                  | 48.918  | -4.5  | 41.053                          | 38.772  | 4.6   |
| HH relation: Head        | 51.342                  | 51.342  | 0.0   | 50.526                          | 50.175  | 0.7   |
| Dur. since mig.: Med.    | 23.377                  | 24.156  | -1.9  | 23.333                          | 24.035  | -1.6  |
| Dur. since mig.: Long    | 74.545                  | 74.113  | 1.0   | 73.860                          | 72.982  | 1.9   |
| Worries xen. hostility   | 02.034                  | 02.001  | 3.4   | 02.026                          | 01.998  | 3.9   |
| Worries crime            | 02.240                  | 02.193  | 6.8   | 02.214                          | 02.183  | 4.6   |
| HSat                     | 06.810                  | 06.843  | -1.4  | 06.686                          | 06.632  | 2.4   |
| LSat                     | 06.852                  | 06.890  | -2.1  | 06.817                          | 06.807  | 0.6   |
| NT                       | 1144                    | 1144    |       | 570                             | 570     |       |
| Mean Bias                | Unmatched               |         | 20.2  |                                 |         | 17.9  |
|                          | Matched                 |         | 2.8   |                                 |         | 2.4   |
| Median Bias              | Unmatched               |         | 15.0  |                                 |         | 15.3  |
|                          | Matched                 |         | 2.6   |                                 |         | 1.9   |

Source: SOEP v32.1 2009-2011, unbalanced panel, own calculations.

Notes: This table provides the means and % standardized bias of the conditioning variables used for matching procedure (before and after the matching). The first three columns present the means and %

standardized bias for Muslim and non-Muslim immigrants in Germany (Model A) and the remaining three columns show the means and % standardized bias for Turkish and non-Turkish nationals in Germany (Model B). Means of the dummy variables are displayed in % terms. Other conditioning variables not shown here include dummies representing survey years and states.

**Table 3.A.2: Means of conditioning variables II (pre-treatment)**

| Variables               | Model A                 |         |       | Model B                          |         |       |
|-------------------------|-------------------------|---------|-------|----------------------------------|---------|-------|
|                         | Muslims vs. non-Muslims |         |       | Turkish nat. vs non-Turkish nat. |         |       |
|                         | Means                   | Means   | Means | Means                            | Means   | Means |
|                         | Treated                 | Control | %bias | Treated                          | Control | %bias |
| Age                     | 44.232                  | 44.167  | 0.4   | 46.114                           | 45.500  | 4.1   |
| SGI                     | 24.464                  | 23.176  | 3.2   | 18.939                           | 19.697  | -1.9  |
| Rural                   | 90.558                  | 88.412  | 6.3   | 89.394                           | 89.394  | 0.0   |
| Female                  | 51.502                  | 50.644  | 1.7   | 50.758                           | 46.970  | 7.6   |
| Married                 | 75.536                  | 72.532  | 6.9   | 78.030                           | 79.545  | -3.6  |
| Divorced                | 07.296                  | 09.871  | -9.2  | 06.818                           | 05.303  | 5.8   |
| Disabled                | 01.914                  | 01.906  | 2.8   | 01.902                           | 01.947  | -15.5 |
| Education               | 10.384                  | 10.337  | 2.0   | 9.7273                           | 9.9470  | -9.6  |
| Work experience         | 16.510                  | 17.088  | -4.4  |                                  |         |       |
| Ln HH income            | 07.689                  | 07.672  | 3.2   | 07.662                           | 07.654  | 1.6   |
| Job type: Med. skilled  | 17.167                  | 18.026  | -2.2  | 12.879                           | 12.121  | 2.1   |
| Job type: High skilled  | 03.863                  | 04.721  | -3.8  | 00.758                           | 0.0000  | 3.9   |
| Owens the house         | 37.768                  | 35.622  | 4.4   | 32.576                           | 31.061  | 3.2   |
| Oral German: v. good    | 69.957                  | 70.815  | -1.8  | 61.364                           | 61.364  | 0.0   |
| Written German: v. good | 55.794                  | 56.223  | -0.9  | 46.212                           | 45.455  | 1.5   |
| HH relation: Head       | 49.356                  | 56.223  | -13.8 | 49.242                           | 53.030  | -7.6  |
| Dur. since mig.: Medium | 17.597                  | 19.313  | -4.3  | 20.455                           | 20.455  | 0.0   |
| Dur. since mig.: Long   | 80.687                  | 79.828  | 2.1   | 78.788                           | 78.788  | 0.0   |
| Feel German             | 02.867                  | 02.828  | 3.3   | 02.606                           | 02.644  | -3.4  |
| Feel Foreign            | 03.562                  | 03.541  | 1.8   | 03.765                           | 03.818  | -4.9  |
| Connect                 | 03.541                  | 03.584  | -4.1  | 03.803                           | 03.864  | -6.2  |
| NT                      | 223                     | 223     |       | 132                              | 132     |       |
| Mean Bias               | Unmatched               |         | 26.1  |                                  |         | 24.7  |
|                         | Matched                 |         | 3.8   |                                  |         | 4.4   |
| Median Bias             | Unmatched               |         | 19.4  |                                  |         | 20.4  |
|                         | Matched                 |         | 3.1   |                                  |         | 3.9   |

Source: SOEP v32.1 2009-2011, unbalanced panel, own calculations.

Notes: This table provides the means and % standardized bias of the conditioning variables used for matching procedure (before and after the matching). The first three columns present the means and % standardized bias for Muslim and non-Muslim immigrants in Germany (Model A) and the remaining three columns show the means and % standardized bias for Turkish and non-Turkish nationals in Germany (Model B). Means of the dummy variables are displayed in % terms. Other conditioning variables for not shown here are denoted in the brackets as follows: Model A (third-order polynomial of age) and Model B (second-order polynomials of age and education).

**Table 3.A.3: Other definitions of the treatment groups**

|   | (1)                 | (2)                  | (3)               | (4)                |
|---|---------------------|----------------------|-------------------|--------------------|
|   | Worries about       | Feel German          | Feel              | Connected          |
| <b>Model A: Muslims vs. non-Muslims</b>                     |                     |                      |                   |                    |
| Muslim*Post2011   | 0.107***<br>(0.041) | -0.333***<br>(0.113) | -0.059<br>(0.176) | 0.171*<br>(0.102)  |
| NT  | 4,387               | 956                  | 651               | 959                |
| N   | 1,495               | 446                  | 446               | 446                |
| <b>Model B: Turkish nationals vs. non-Turkish nationals</b> |                     |                      |                   |                    |
| Turk_nat*Post2011   | 0.139***<br>(0.064) | -0.439***<br>(0.146) | 0.286<br>(0.204)  | 0.265**<br>(0.133) |
| NT  | 2,053               | 536                  | 381               | 539                |
| N   | 768                 | 264                  | 264               | 264                |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the baseline results for two alternative definitions of the treatment groups. Control variables include all the conditioning variables shown in the above tables and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. A third-order polynomial is used for the control variable age, whereas, second-order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Appendix B: Lead and lag effects of the treatment for the matched sample**

Using survey year dummies in place of the treatment indicator (post2011) in the baseline interaction with the treated dummy (Turks), I present the lead and lag effects of the treatment. In addition to fixed-effects estimator, the Table 3.A.4 also includes the results estimated using random-effects estimator and the pooled OLS. The results support the graphical evidence presented in the main text.

**Table 3.A.4: Lead and lag effects of the treatment**

|                        | (1)<br>FE          | (2)<br>RE          | (3)<br>OLS         |
|------------------------|--------------------|--------------------|--------------------|
| Turks*survey year 2010 | 0.017<br>(0.077)   | 0.020<br>(0.068)   | 0.030<br>(0.073)   |
| Turks*survey year 2011 | -0.005<br>(0.086)  | 0.016<br>(0.080)   | 0.026<br>(0.088)   |
| Turks*survey year 2012 | 0.175**<br>(0.078) | 0.186**<br>(0.073) | 0.201**<br>(0.079) |
| Turks*survey year 2013 | 0.103<br>(0.080)   | 0.121<br>(0.076)   | 0.144*<br>(0.085)  |
| Turks*survey year 2014 | 0.177**<br>(0.083) | 0.181**<br>(0.076) | 0.202**<br>(0.081) |
| NT                     | 3,458              | 3,458              | 3,458              |
| N                      | 1,287              | 1,287              | 1,287              |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the lead and lag effects of the baseline model presented in Table 3.4 with different estimation methods. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 3.A.5: Means of outcome variables**

| Survey years     | Worries about Xenophobic |           | Worries about |           | Feel German |           | Feel Foreign |           | Connected to home country |           |
|------------------|--------------------------|-----------|---------------|-----------|-------------|-----------|--------------|-----------|---------------------------|-----------|
|                  | Turks                    | Non-Turks | Turks         | Non-Turks | Turks       | Non-Turks | Turks        | Non-Turks | Turks                     | Non-Turks |
| 2009             | 2.004                    | 2.044     | 2.225         | 2.149     | .           | .         | .            | .         | .                         | .         |
| 2010             | 2.126                    | 2.107     | 2.252         | 2.301     | 2.695       | 2.604     | 3.556        | 3.524     | 3.642                     | 3.647     |
| 2011             | 2.072                    | 2.068     | 2.233         | 2.208     | .           | .         | .            | .         | .                         | .         |
| <b>Treatment</b> |                          |           |               |           |             |           |              |           |                           |           |
| 2012             | 2.186*                   | 2.025     | 2.163         | 2.226     | 2.796**     | 3.174     | 3.813*       | 3.479     | 3.648                     | 3.500     |
| 2013             | 2.096                    | 1.981     | 2.191         | 2.228     | .           | .         | .            | .         | .                         | .         |
| 2014             | 2.267*                   | 2.054     | 2.257         | 2.313     | 2.886       | 3.196     | .            | .         | 3.785*                    | 3.364     |

Note: The table provides means of the outcome variables used for the study. The summary is displayed as a comparison between the treated group and the control group for each year in the sample. Simple Wald tests are performed to show the statistically significant differences in the means. The stars \*, \*\* and \*\*\* indicate that the mean value for the treatment group is statistically different from the mean value for the non-treatment group at the 0.10 level, 0.05 level, and 0.01 level respectively.

*Appendix C: Estimates using the unmatched sample*

**Table 3.A.6: Unmatched sample (lead and lag effects)**

|                        | (1)<br>All sample | (2)<br>After      | (3)<br>After      |
|------------------------|-------------------|-------------------|-------------------|
| Turks*survey year 2010 | 0.031<br>(0.054)  | 0.035<br>(0.054)  | 0.031<br>(0.054)  |
| Turks*survey year 2011 | 0.049<br>(0.058)  | 0.061<br>(0.059)  | 0.059<br>(0.059)  |
| Turks*survey year 2012 | 0.088<br>(0.060)  | 0.102*<br>(0.060) | 0.105*<br>(0.060) |
| Turks*survey year 2013 | 0.029<br>(0.059)  | 0.034<br>(0.059)  | 0.034<br>(0.059)  |
| Turks*survey year 2014 | -0.014<br>(0.059) | 0.004<br>(0.060)  | 0.002<br>(0.060)  |
| NT                     | 24,712            | 21,852            | 21,129            |
| N                      | 9,839             | 8,438             | 8,183             |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: In this table, I re-estimate the main results on the unmatched sample. Column (1) presents the results with sample restrictions identical to baseline specification. In column (2), I estimate the results after dropping individuals from all Islamic countries from the control group. In column (3), I further drop Muslim respondents from the control group and re-estimate the results. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Appendix D: Conditioning on all outcomes together**

The survey questions asking information on respondents' worries, i.e. worries about xenophobic hostility as well as crime development, were included annually in the SOEP questionnaire. However, survey questions asking information on respondents' self-identification, i.e. Feel German, Feel Foreign and Connection to the home country, were included biennially in the SOEP questionnaire. Therefore, in the chapter, I had presented the matching strategy separately for outcomes indicating respondents' worries and their self-identification. Here, I present results for the matching strategy performed on all the outcomes together. The summary of means of conditioning variables can be made available on request. In conclusion, even after conditioning on all outcomes together, I find qualitatively similar results to the ones reported in the chapter.

**Table 3.A.7: Means of conditioning variables (pre-treatment)**

| Variables                          | Means         |                   | %bias |
|------------------------------------|---------------|-------------------|-------|
|                                    | Treated Turks | Control Non-Turks |       |
| Age                                | 44.360        | 45.012            | -4.4  |
| SGI                                | 11.628        | 13.953            | -6.7  |
| Rural                              | 85.465        | 84.884            | 1.6   |
| Female                             | 50.581        | 45.349            | 10.5  |
| Married                            | 77.326        | 76.163            | 2.7   |
| Divorced                           | 07.558        | 06.977            | 2.1   |
| Disabled                           | 01.913        | 01.890            | 7.5   |
| Education                          | 10.064        | 10.131            | -2.9  |
| Work experience                    | 16.622        | 16.410            | 1.6   |
| Ln HH income                       | 07.707        | 07.703            | 0.6   |
| Job type: Medium skilled           | 16.279        | 15.698            | 1.5   |
| Job type: High skilled             | 02.326        | 03.488            | -5.6  |
| Owns the house                     | 37.791        | 37.209            | 1.2   |
| Oral German: very good             | 65.698        | 59.302            | 13.4  |
| Written German: very good          | 50.581        | 48.256            | 4.7   |
| HH relation: Head                  | 50.000        | 48.837            | 2.3   |
| Duration since migration: Medium   | 20.349        | 20.930            | -1.4  |
| Duration since migration: Long     | 78.488        | 78.488            | 0.0   |
| Worries about xenophobic hostility | 02.012        | 02.035            | -3.4  |
| Worries about crime development    | 02.297        | 02.267            | 4.4   |
| Feel German                        | 02.744        | 02.663            | 7.0   |
| Feel Foreign                       | 03.523        | 03.611            | -7.2  |
| Connected to home country          | 03.558        | 03.645            | -8.3  |
| <b>NT</b>                          | 172           | 172               |       |
| <b>Mean Bias</b>                   |               |                   | 4.5   |
| <b>Median Bias</b>                 |               |                   | 4.4   |

Source: SOEP v32.1 2009-2011, unbalanced panel, own calculations.

Notes: This table provides the means and % standardized bias of the conditioning variables used for matching procedure. Means of the dummy variables are displayed



in % terms. Other conditioning variables not shown here is the third-order polynomial used for the control variable age.

**Table 3.A.8: Lead and lag effects when conditioning on all outcomes together**

|                        | <b>Model 1</b>  |                                  |                                       |  |
|------------------------|---|----------------------------------|---------------------------------------|--|
|                        | <b>(1)</b><br><b>Worries<br/>about<br/>Xenophobic<br/>Hostility</b> | <b>(2)</b><br><b>Feel German</b> | <b>(3)</b><br><b>Feel<br/>Foreign</b> | <b>(4)</b><br><b>Connected<br/>to home<br/>country</b> |
| Turks*survey year 2010 | 0.004<br>(0.086)  |                                  |                                       |  |
| Turks*survey year 2011 | 0.052<br>(0.097)  |                                  |                                       |  |
| Turks*survey year 2012 | 0.189*<br>(0.105)   | -0.576***<br>(0.163)             | 0.520**<br>(0.206)                    | 0.185<br>(0.137)                                       |
| Turks*survey year 2013 | -0.030<br>(0.103)   |                                  |                                       |  |
| Turks*survey year 2014 | 0.294**<br>(0.116)  | -0.336**<br>(0.156)              |                                       | 0.343***<br>(0.131)                                    |
| NT                     | 1,440   | 707                              | 512                                   | 711  |
| N                      | 344   | 344                              | 344                                   | 344  |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the lead and lag effects of the baseline model when conditioning on all outcomes together. Control variables include all the conditioning variables shown in Table 3.3 and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. A third-order polynomial is used for the control variable age, whereas, second order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Appendix E: Conditioning for assimilation outcomes

Table 3.A.9: Means of conditioning variables (pre-treatment)

| Variables                                   | Matching Status | Means         |                   | %bias | % red. in bias |
|---|-----------------|---------------|-------------------|-------|----------------|
|   |                 | Treated Turks | Control Non-Turks |       |                |
| <b>A. Demographic characteristics</b>       |                 |               |                   |       |                |
| Age   | Unmatched       | 45.294        | 48.833            | -24.1 |                |
|   | Matched         | 45.706        | 45.321            | 2.6   | 89.1           |
| SGI   | Unmatched       | 08.163        | 20,837            | -36.6 |                |
|   | Matched         | 10.695        | 15,508            | -13.9 | 62.0           |
| Rural                                       | Unmatched       | 86.122        | 82,473            | 10.0  |                |
|   | Matched         | 86.096        | 86,631            | -1.5  | 85.3           |
| Female                                      | Unmatched       | 46.939        | 54.722            | -15.6 |                |
|   | Matched         | 48.663        | 50.267            | -3.2  | 79.4           |
| Married                                     | Unmatched       | 81.224        | 71.081            | 23.9  |                |
|   | Matched         | 78.610        | 75.401            | 7.6   | 68.4           |
| Divorced                                    | Unmatched       | 07.347        | 09.542            | -7.9  |                |
|   | Matched         | 07.487        | 07.487            | 0.0   | 100.0          |
| Disabled                                    | Unmatched       | 01.898        | 01.887            | 3.5   |                |
|   | Matched         | 01.898        | 01.893            | 1.7   | 51.0           |
| <b>B. Economic characteristics</b>          |                 |               |                   |       |                |
| Education                                   | Unmatched       | 9.6653        | 11.647            | -87.3 |                |
|   | Matched         | 9.9626        | 10.053            | -4.0  | 95.4           |
| Log HH income                               | Unmatched       | 07.673        | 07.792            | -23.0 |                |
|   | Matched         | 07.682        | 07.682            | -0.1  | 99.4           |
| Job type: Medium skilled                    | Unmatched       | 14.286        | 21.714            | -19.4 |                |
|   | Matched         | 15.508        | 13.904            | 4.2   | 78.4           |
| Job type: High skilled                      | Unmatched       | 01.633        | 07.400            | -28.0 |                |
|   | Matched         | 02.139        | 00.535            | 7.8   | 72.2           |
| Owns the house                              | Unmatched       | 35.510        | 41.772            | -12.9 |                |
|   | Matched         | 36.898        | 36.898            | 0.0   | 100.0          |
| <b>C. Migration-related characteristics</b> |                 |               |                   |       |                |
| Oral German: very good                      | Unmatched       | 59.184        | 69.620            | -21.9 |                |
|   | Matched         | 63.636        | 64.171            | -1.1  | 94.9           |
| Written German: v. good                     | Unmatched       | 44.898        | 57.644            | -25.7 |                |
|   | Matched         | 47.594        | 49.198            | -3.2  | 87.4           |
| HH relation: Head                           | Unmatched       | 49.388        | 54.820            | -10.9 |                |
|   | Matched         | 50.802        | 47.059            | 7.5   | 31.1           |
| Dur. since mig.: Med.                       | Unmatched       | 18.367        | 25.414            | -17.1 |                |
|   | Matched         | 19.251        | 17.112            | 5.2   | 69.6           |
| Dur. since mig.: Long                       | Unmatched       | 80.816        | 71.665            | 21.6  |                |
|   | Matched         | 79.679        | 82.888            | -7.6  | 64.9           |
| <b>D. Pre-treatment outcomes</b>            |                 |               |                   |       |                |
| Feel German                                 | Unmatched       | 02.559        | 03.398            | -72.2 |                |
|   | Matched         | 02.695        | 02.604            | 7.8   | 89.2           |
| Feel Foreign                                | Unmatched       | 03.616        | 03.414            | 16.6  |                |
|   | Matched         | 03.556        | 03.524            | 2.6   | 84.2           |
| Connect                                     | Unmatched       | 03.706        | 03.384            | 30.6  |                |
|   | Matched         | 03.642        | 03.647            | -0.5  | 98.3           |
| <b>NT</b>                                   |                 | 187           | 187               |       |                |
| <b>Mean Bias</b>                            | Unmatched       |               |                   | 25.6  |                |
|   | Matched         |               |                   | 3.8   |                |
| <b>Median Bias</b>                          | Unmatched       |               |                   | 22.5  |                |
|   | Matched         |               |                   | 2.9   |                |

---

Source: SOEP v32.1 2009-2011, unbalanced panel, own calculations.

Notes: This table provides the means and % standardized bias of the conditioning variables used for matching procedure (before and after the matching). The first two columns present the means for Turkish and non-Turkish immigrants in Germany. Third and fourth columns present % standardized bias and post-matching reduction in the standardized bias. Means of the dummy variables are displayed in % terms. Other conditioning variables not shown here include a third-order polynomial of the control variable age.

*Appendix F: Conditioning separately for worries about crime development in Germany*

**Table 3.A.10: Means of conditioning variables (pre-treatment)**

| Variables                                     | Means            |                      |       |
|---|------------------|----------------------|-------|
|   | Treated<br>Turks | Control<br>Non-Turks | %bias |
| Age   | 42.616           | 42.261               | 2.4   |
| SGI   | 16.350           | 17.300               | -2.2  |
| Rural   | 86.287           | 88.080               | -4.8  |
| Female  | 48.734           | 50.949               | -4.4  |
| Married                                       | 79.536           | 77.532               | 4.6   |
| Divorced                                      | 07.700           | 08.122               | -1.5  |
| Disabled                                      | 01.902           | 01.910               | -2.5  |
| Education                                     | 10.151           | 10.140               | 0.5   |
| Work experience                               | 14.732           | 14.161               | 4.6   |
| Ln HH income                                  | 07.658           | 07.643               | 2.9   |
| Job type: Medium skilled                      | 13.819           | 13.186               | 1.7   |
| Job type: High skilled                        | 02.532           | 02.110               | 1.8   |
| Oral German: very good                        | 47.785           | 46.730               | 2.1   |
| Written German: very good                     | 38.397           | 37.658               | 1.6   |
| HH relation: Head                             | 51.160           | 50.738               | 0.8   |
| Owens the house                               | 33.966           | 33.017               | 2.0   |
| Duration since migration: Medium              | 21.730           | 20.886               | 2.0   |
| Duration since migration: Long                | 76.266           | 77.004               | -1.7  |
| Pre-treatment worries about crime development | 02.240           | 02.258               | -2.8  |
| <b>NT</b>                                     | 948              | 948                  |       |
| <b>Mean Bias</b>                              | 2.4              |                      |       |
| <b>Median Bias</b>                            | 2.0              |                      |       |

Source: SOEP v32.1 2009-2011, unbalanced panel, own calculations.

Notes: This table provides the means and % standardized bias of the conditioning variables used for matching procedure. Means of the dummy variables are displayed in % terms. Other conditioning variables not shown here is the third-order polynomial used for the control variable age and second-order polynomials for education and experience. Other conditioning variables not shown here include dummies representing survey years and states.

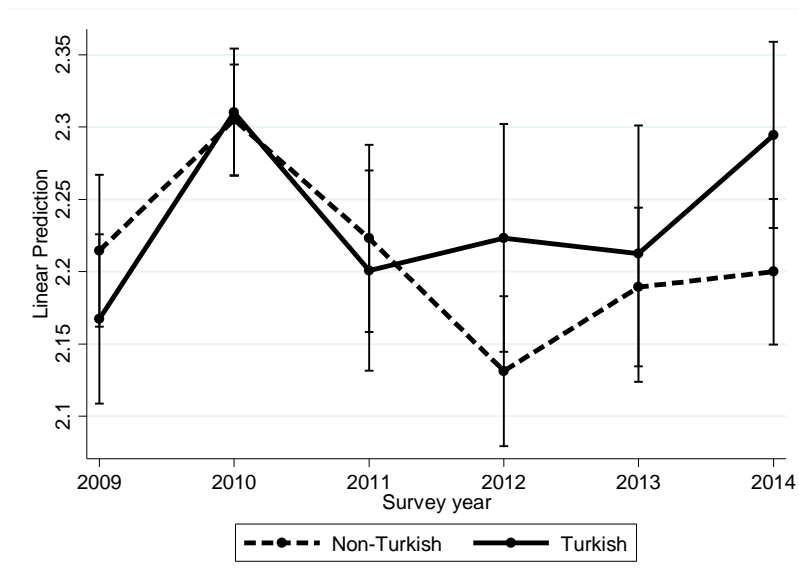
**Table 3.A.11: Worries about crime development**

|                | (1)<br>Worries about<br>Crime<br>development |
|----------------|--|
| Turks*post2011 | 0.100**<br>(0.042)                           |
| NT             | 3,645  |
| N              | 1,344  |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the baseline results when conditioning on pre-treatment worries about crime development. Control variables include all the conditioning variables shown in Table F.1 and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. A third-order polynomial is used for the control variable age, whereas, second order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Figure 3.A.1: Evolution of worries of worries about crime (scaled 1-3)**



Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: The figure plots the predictive margins (with 95% CI) respondent's worries about crime development in Germany. The treatment dummy (post2011) is replaced with survey year dummies to obtain the predictive margin for each year.

**Appendix G: With enlarged treated group including all MENA immigrants in Germany**

I include the MENA immigrants in the experimental setup to construct an enlarged treated group of Turkey-MENA immigrants. This exercise captures whether the treatment effect was also felt by the Diaspora of Middle-eastern and North African immigrants given their similarities in appearance with Turkish immigrants. The variable T-MENA takes the value of 1 if the respondent originates from Turkey or MENA countries listed in section 3.3. The results are virtually unchanged.

**Table 3.A.12: After enlarging treated group to include MENA immigrants**

|                 | (1)<br>Worries about<br>Xenophobic<br>Hostility | (2)<br>Feel German   | (3)<br>Feel<br>Foreign | (4)<br>Connected<br>to home<br>country |
|-----------------|---|----------------------|------------------------|--|
| T-MENA*Post2011 | 0.151***<br>(0.046)                             | -0.454***<br>(0.139) | 0.415**<br>(0.195)     | 0.207*<br>(0.119)                      |
| NT              | 3,457   | 774                  | 561                    | 779                                    |
| N               | 1,293   | 374                  | 374                    | 374                                    |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the results for additional robustness checks performed to verify the main results of this chapter. Control variables include all the conditioning variables shown in Table 3.3 and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. A third-order polynomial is used for the control variable age, whereas, second-order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

### *Appendix H: Success of the matching procedure*

It is important to test whether the matching was successful. If it was successful, then the baseline estimates should not depend on the inclusion of control variables. To show this, I re-estimate the main results without the inclusion of control variables. The results presented in Table 3.A.13 demonstrate that the estimates are virtually unchanged.

**Table 3.A.13: Baseline estimates without control variables**

|                | (1)<br>Worries about<br>Xenophobic<br>Hostility | (2)<br>Feel German   | (3)<br>Feel<br>Foreign | (4)<br>Connected<br>to home<br>country |
|----------------|---|----------------------|------------------------|--|
| Turks*Post2011 | 0.153***<br>(0.046)                             | -0.424***<br>(0.136) | 0.352*<br>(0.190)      | 0.190*<br>(0.113)                      |
| NT             | 3,458   | 774                  | 561                    | 779                                    |
| N              | 1,287   | 374                  | 374                    | 374                                    |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the main results without the inclusion of control variables. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Appendix I: Heterogeneous treatment effects**

Column 1 of Table 3.A.14 shows the test results of whether the respondents' immigration status is an important consideration for the heterogeneity of the treatment effect by interaction of the dummy variable for SGI status with the baseline interaction term. The results suggest that we cannot reject the null hypothesis that the treatment effect was homogeneous among FGIs and SGIs. Columns 2 and 3 show the results for whether the respondents' education and religiosity are sources of the heterogeneity of the treatment effect. The dummy variable Highedu is 1 if the respondent has spent more than 12 years in education and 0 otherwise. The respondents' religiousness is captured using another SOEP variable about whether respondents had attended religious services in the last 7 days. The estimates of the subgroup-specific treatment effects are imprecise and have large standard errors. Thus, we cannot reject the null hypothesis that the treatment effect was homogeneous across the respondents' education and religiousness.

**Table 3.A.14: Heterogeneous treatment effects on worries about xenophobic hostility**

|                          | (1)<br>Immigration<br>status | (2)<br>Respondent's<br>Education | (3)<br>Religiosity |
|--------------------------|------------------------------|----------------------------------|--------------------|
| Turks*Post2011           | 0.140***<br>(0.051)          | 0.162***<br>(0.050)              | 0.125**<br>(0.061) |
| Turks*Post2011*SGI       | 0.059<br>(0.127)             |                                  |                    |
| Turks*Post2011*Highedu   |                              | -0.090<br>(0.155)                |                    |
| Turks*Post2011*Religious |                              |                                  | 0.049<br>(0.095)   |
| NT                       | 3,458                        | 3,458                            | 3,458              |
| N                        | 1,287                        | 1,287                            | 1,287              |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Note: The analysis presented in this table investigates the heterogeneous treatment effects of 2011 revelations with respect to pertinent individual characteristics (immigration status, education, and religiosity). High educated (low educated) respondents are respondents with 12 years or more (less than 12 years) spent in education. A respondent is coded as religious if he/she reports having attended religious services in the last 7 days. Control variables include all the conditioning variables shown in Table 3.3 and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. A third-order polynomial is used for the control variable age, whereas, second-order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.



## ***Appendix J: Additional robustness checks***

### *J.1 After controlling for ethnicity-specific shocks*

Panel A of Table 3.A.15 presents the main results after controlling for ethnicity-specific shocks.

### *J.2 Alternative/restrictive definitions of the treatment group*

Information on the country of birth of SGI respondents' parents is not available for all respondents (12% of the SGIs in the matched sample). In cases where the country of origin was missing for both parents, SGI observations were assumed to belong to the control group. To address this concern, the robustness of the main results was tested in the following two ways. First, the baseline regressions were re-estimated after omitting SGI respondents for which the country of origin was missing for both parents. Second, estimates are shown separately for the FGIs alone to estimate the magnitude of the treatment effect after ignoring the missing value problem. The results are shown in panels B and C of Table 3.A.15 and are in line with the main findings of the chapter.

### *J.3 Pseudo-outcomes: were the labor-market outcomes impacted?*

Economics studies have investigated the impact of Islamist terror events on the labor market outcomes of Islamic immigrants (Åslund and Rooth, 2005; Dávila and Mora, 2005; Kaushal et al., 2007; Cornelissen and Jirjahn, 2012). These studies consider the mechanism to involve Islamist terror events generating a backlash against Islamic minorities residing in a particular country. This backlash takes the form of increased labor market discrimination against Islamic residents and affects their labor market outcomes. However, the NSU crimes were xenophobic crimes in which Islamic Turkish immigrants were the victims, and the perpetrators were non-Islamic white German natives. In effect, a backlash resulting in labor market discrimination is not expected against Turkish immigrants in Germany post-2011, and their labor market outcomes are not expected to be affected after the 2011 revelations. This was tested by considering the following two labor market outcomes (pseudo-outcomes): unemployment status and hourly wages.

These outcomes were used to investigate whether Turkish immigrants showed an increase in unemployment or lower hourly wages. Unemployment status is a dummy variable that takes a value of 1 if the respondent is unemployed and 0 otherwise. Hourly wages were constructed using information on the respondents' monthly earnings and weekly hours worked. Hourly wages were calculated using the following equation:  $\text{hourly wages} = (\text{monthly\_income} * 12) / (\text{weekly\_hours} * 52.179)$ . The main results are presented in Table 3.A.16 and do not suggest any significant effect of the revelations on the labor market outcomes of Turkish

immigrants. Therefore, the revelations impacted only social outcomes and did not increase labor market discrimination against this group.

**Table 3.A.15: Additional robustness checks**

|   | (1)                                      | (2)                  | (3)                | (4)                             |
|---|--|----------------------|--------------------|---------------------------------|
|   | Worries about<br>Xenophobic<br>Hostility | Feel German          | Feel<br>Foreign    | Connected<br>to home<br>country |
| <b>A. After controlling for ethnicity-specific time trends</b>              |  |                      |                    |                                 |
| Turks*Post2011  | 0.179**<br>(0.084)                       | -0.375**<br>(0.162)  | 0.415**<br>(0.196) | 0.235*<br>(0.142)               |
| NT  | 3,457                                    | 774                  | 561                | 779                             |
| N   | 1,286                                    | 374                  | 374                | 374                             |
| <b>B. After omitting SGI observations with missing parental information</b> |  |                      |                    |                                 |
| Turks*Post2011  | 0.131***<br>(0.048)                      | -0.474***<br>(0.135) | 0.453**<br>(0.186) | 0.199<br>(0.122)                |
| NT  | 3,302                                    | 685                  | 509                | 688                             |
| N   | 1,239                                    | 330                  | 330                | 330                             |
| <b>C. Estimates separately for FGIs</b>                                     |  |                      |                    |                                 |
| Turks*Post2011  | 0.146***<br>(0.051)                      | -0.467***<br>(0.150) | 0.400**<br>(0.196) | 0.215*<br>(0.123)               |
| NT  | 2,837                                    | 673                  | 511                | 678                             |
| N   | 1,022                                    | 325                  | 325                | 325                             |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the results for additional robustness checks performed to verify the main results of this chapter. Control variables include all the conditioning variables shown in Table 3.3 and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. A third-order polynomial is used for the control variable age, whereas, second-order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 3.A.16: Robustness of the mechanism (pseudo-outcomes)**

|                | (1)<br><b>Unemployment<br/>status</b> | (2)<br><b>Hourly<br/>wages</b> |
|----------------|---------------------------------------|--------------------------------|
| Turks*Post2011 | -0.010<br>(0.015)                     | 0.025<br>(0.028)               |
| NT             | 4,989                                 | 2,477                          |
| N              | 1,537                                 | 830                            |

Source: SOEP v32.1 2009-2014, unbalanced panel, own calculations.

Notes: This table presents the results of the robustness check of the mechanism considered in this chapter. The following two economic outcomes are considered: unemployment probability (a dummy variable), and hourly wages. Matching is performed separately for these two outcomes as unemployed respondents do not report their hourly wages and job skills. Control variables included in matching procedure performed for both outcomes are remaining conditioning variables shown in Table 3.3, and state-level variables such as the immigrant share of population and log of the number of rightwing violent crimes. A third-order polynomial is used for the control variable age, whereas, second-order polynomials are used for control variables education and experience. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

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## 4 How do new immigration flows affect existing immigrants?<sup>69</sup>

### Abstract

We apply difference-in-differences regressions to estimate the impact of the in-flows of refugees fleeing civil wars in the Middle-East to Germany on the culturally closer existing Diaspora of Turkish and Middle-Eastern and North-African (T-MENA) immigrants. Our results show that T-MENA immigrants observed a substantial reduction in unemployment in the year 2015. We interpret these results to be consistent with the differential demand shock induced by refugees' consumption of culturally similar goods and services, e.g. ethnic grocery stores, restaurants serving *halal* food, etc. We, however, find that these unemployment effects dissipated starting in year 2016 which coincided with the refugees' delayed yet incremental labor market integration. We also consider the social impact of the refugee crisis and find that due to their cultural closeness with the arriving refugees, T-MENA immigrants were less worried about the social impact of the crisis. We find that while worries about immigration, crime development, and xenophobic hostility increased among all respondents (German natives and immigrants alike), the increases in worries were statistically significantly smaller for T-MENA immigrants. We do not find any effects on T-MENA immigrants' assimilation of the host identity. Instead, we find that they now report having increased their contact with the home country's culture. Our findings do not report any effects on their life satisfaction and health satisfaction.

### 4.1 Introduction

Ample amount of economics literature is devoted to estimating the impact of immigration.<sup>70</sup> <sup>71</sup> This literature often focuses on the impact of immigration on natives and sidelines or many times completely ignores the multifaceted effects that the new immigration flows can have on existing immigrants.<sup>72</sup>

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<sup>69</sup> This is a coauthored work with Yue Huang (OVG Magdeburg, Germany).

<sup>70</sup> Kerr and Kerr (2011), for example, present a review of the existing literature investigating the economic impact of immigration for natives and, contrary to popular wisdom, put immigration broadly in a positive light.

<sup>71</sup> The major strands of economics literature on immigration can be classified on the basis of the outcomes investigated, e.g. labor market outcomes (Borjas, 2017; Card, 1990; Ceritoglu et al., 2017; Jaeger et al., 2018; Peri and Yasenov, 2017; Tumen, 2016; Fallah et al., 2019), crime rate (Bell et al., 2013; Bianchi et al., 2012; Butcher and Piehl, 1998; Dehos, 2017; Mastrobuoni and Pinotti, 2011; Spenkuch, 2014), housing market (Kürschner Rauck and Kvasnicka, 2018; Tumen, 2016), education (Brunello and Rocco, 2013; Brunello et al., 2017; Hunt, 2017), health (Escarce and Rocco, 2018), political outcomes (Harmon, 2018) etc.

<sup>72</sup> A recent working paper by Malaeb and Wahba (2018) studies the economic impact of the influx of Syrian refugees to Jordan on the existing immigrants in Jordan. They find that the economic immigrants in Jordan were likely to work in the informal sector, worked fewer hours and earned lower total wages after the refugee crisis. They show that the impact of refugee influx was felt more by the economic migrants in Jordan than natives.

International immigration being one of the most contentious issues in this increasingly globalized world, we provide an extensive analysis of the impact of sudden and massive inflows of new immigrants on the existing immigrants. Particularly, we exploit the episode of 2015 European refugee crisis (ERC) to study the impact of inflows of refugees originating from the Middle-East countries on the socio-economic outcomes of the existing Diaspora of immigrants from Turkey and Middle-Eastern and North African (T-MENA) countries in Germany.<sup>73</sup>

T-MENA immigrants in Germany have a long history of residence. Especially, the Turkish immigrants, one of the largest Diasporas of immigrants in Germany, first arrived as a part of the *Gästarbeiter* program. The program was planned for post-World War II German reconstruction efforts in the 1960s. The program allowed, among many other countries, immigrants from other T-MENA countries such as Morocco and Tunisia, though in relatively lower numbers. Since their arrival, other immigrant groups have smoothly integrated into the German society, but the socio-economic assimilation of Islamic immigrants, especially of Turkish immigrants, has been a major concern widely shared among policy-makers and researchers alike (Constant et al., 2006; Constant et al., 2012). Constant et al. (2012, p.79), for example, shows that Turkish immigrants report the lowest levels of education in Germany. Additionally, their cultural integration levels are also among the lowest, denoted by lower inter-ethnic marriage rates (Constant et al., 2012, p.86), higher fertility rates (Constant et al., 2012, p.94), etc. Emerging literature is devoted to unearth the determinants of their lower assimilation levels (Deole, 2019; Steinhardt 2018). This chapter aims to contribute to this literature by introducing a novel determinant of immigrants' socio-economic assimilation in the host environment, i.e. new immigrant inflows.

In the year 2015, around 890,000 asylum seekers entered Germany, a crisis referred to as the European refugee crisis (BAMF, 2016b).<sup>74</sup> In Table 4.1, we extract information on the recently arrived refugees in Germany from the Socio-economic Panel (SOEP) data and present a description of their pertinent characteristics based on their year of immigration to Germany. We make the following observations. First, we see that the inflow of refugees indeed increased towards the year 2015 in Germany. That is, more refugees report to have arrived in Germany in the year 2015, a supporting argument for the earlier

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<sup>73</sup> We interchangeably refer to the treatment of the 2015 European refugee crisis as ERC or 2015 ERC or refugee crisis.

<sup>74</sup> There is a controversy surrounding the exact number of asylum seekers entering Germany. The controversy also extends to the deportation of asylum seekers originating from countries other than the ones allowed through Germany's Open Border Policy. Consequently, we rely on the numbers provided by the German statistical organization Bundesamt für Migration und Flüchtlinge (BAMF) as well as our calculations based on the German Socio-economic Panel (SOEP) data.

observation. Second, a sizeable majority of the refugees originated from Middle-Eastern countries<sup>75 76</sup> That is, around 4405 refugees originated from Syria, and about 1177 refugees originated from Iraq, together constituting two-third of the total accepted refugees in Germany. Third, the incoming Middle-eastern refugees also report lower levels of education (approx. 10 education years) and working experience (approx. 8 years). Existing research suggests that their lower levels of educational qualifications may be a concern for their labor market integration (Brücker, 2018). However, as the table shows, older cohorts of refugees are increasingly finding jobs in Germany. That is, we see that refugees who arrived in Germany before the year 2015 increasingly report being active on the labor market, i.e., they report their *labor force status* as working/unemployed than those who came later.

The chapter aims to study the economic and social impact of refugee inflows from the Middle-East on the culturally closer existing Diaspora of T-MENA immigrants in Germany. Given that the refugee inflows are largely considered to be exogenous, they provide us with a quasi-experimental setting. Using German Socio-economic Panel data (SOEP), we implement difference-in-differences regressions to estimate the average differences in treatment effects of the ERC on T-MENA immigrants. To construct our experimental groups, we refer to the literature that shows the intimate role played by the respondent's ethnic identity in their economic and social behavior (Charness et al., 2007; Constant and Zimmermann, 2008; Battu and Zenou, 2010; Hatton and Leigh, 2011; Angelini et al. 2015; Bisin et al., 2016). The baseline sample is restricted to respondents with migrant background only, i.e. first-generation and second-generation immigrants in Germany.<sup>77</sup> Individuals originating from T-MENA countries are the treated group whereas non-T-MENA immigrants are the relevant control group.

Our experimental set-up hinges on the two following justifications. First, our consideration that the arriving Middle-Eastern refugees are culturally similar to T-MENA immigrants than they are to non-T-MENA immigrants in Germany (and to German natives) needs additional convincing. First, it must be noted that, besides being T-MENA countries, Syria and Iraq share geographical borders and historical connections with many countries in the region, especially Turkey. Most notably, the centuries-long rule of Ottoman Empire also spread across the Middle-East which especially included modern day Turkey, Syria, Iraq, etc. Second,

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<sup>75</sup> According to the statistics provided by BAMF (2019), in the year 2015, the net migration gain (calculated after subtracting the number of emigrants to these countries from the number of immigrants from these countries in a given year) for Germany from Syria (316,732), Iraq (67,345) and Afghanistan (89,931) amounted to total of 474,008 asylum seekers. This number dropped in years 2016 (Total=282,151; Syria=153,239; Iraq=61,409; Afghanistan=67,503) and 2017 (Total=76,942; Syria=49,123; Iraq=20,800; Afghanistan=7,019). A vast majority of the immigrants originating from these countries were asylum seekers.

<sup>76</sup> We assume that Afghanistan is a Middle-Eastern country; however, this assumption is sometimes contradicted. We confirm that this inclusion of Afghanistan in the T-MENA group is not important for the main results as very few existing immigrants in the sample originate from Afghanistan (total 12 individual-year observations). Main results hold even after dropping these observations from the sample.

<sup>77</sup> In subsection 4.4.4, we consider German natives as another control group to verify our main findings.

the predominant religion in Syria and Iraq is Islam which is another common feature of T-MENA countries. Finally, we refer to the notable measure of country's culture, the Hofstede' individualism index (Hofstede, 2001). This measure ranks countries on a scale ranging from collectivist (0) to individualistic (100) countries. Gorodnichenko and Roland (2017) show that countries who fair higher on this indicator have more individualistic culture which leads to more innovation and to higher growth, highlighting the role of country's culture in its economic performance. This measure for a selected few countries is as follows: Syria (35), Turkey (37), Iraq (30), Germany (67), Poland (60), Czech Republic (58) and Italy (76).<sup>78</sup> This supports our claim that arriving Middle-Eastern refugees are culturally closer to the largest Diaspora of T-MENA immigrants, i.e. Turkish immigrants, than to the native Germans or to non-T-MENA immigrants in Germany (immigrants from Poland, Czech Republic, Italy, etc.).

Second, although culturally similar, it is important to justify whether the arriving Middle-Eastern refugees can indeed have a differential effects on the T-MENA immigrants. This justification is particularly crucial as it is difficult to claim that the control group, be it non-T-MENA immigrants or German natives, were not affected by the ERC. Regarding the economic impact of the ERC, we expect the following two effects. First, due to the sudden arrival of more than half a million Middle-Eastern asylum seekers to Germany, we expect an immediate demand shock to the economy overall. But differential demand effects for T-MENA immigrants can be expected in response to asylum seekers' consumption of culturally similar goods and services, e.g. ethnic grocery stores, restaurants serving *halal* food, etc. Second, we consider the differential labor supply effects on T-MENA immigrants associated with refugees' entry into the labor market. Their entry was incremental and delayed largely due to the time-consuming yet necessary completion of asylum procedures, German language courses, professional training, etc. As noted earlier, Middle-Eastern refugees, like existing T-MENA immigrants, report on average lower education and professional skills compared to other immigrant groups in Germany (and German natives). More so, as Table 4.1 shows, refugees are largely overrepresented in low-skilled occupations. Therefore, following D'Amuri et al. (2010), we assume a higher degree of substitution between these groups and expect that these groups compete for similar jobs in the labor market. Next we discuss the social impact of the ERC. Given the cultural similarities of new immigrants with the existing T-MENA immigrants, the worries about the social impact of the ERC,

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<sup>78</sup> Hofstede provides other measures of cultural dimensions. The first Hofstede measure is the Power Distance Index. This measure denotes how a society handles inequalities among people. Higher values for this measure represent that society prefers a hierarchical order in which everybody has a place and that this place needs no further justification. For this measure, the selected countries are ranked as follows: Syria (80), Turkey (66), Iraq (95), Germany (35), Poland (68), Czech Republic (57), and Italy (50). The second measure that we consider is the Masculinity vs. Femininity index. A higher score on this indicator denotes that society prefers to be tough and competitive (Masculinity). A lower score stands for society's preference for consensus-orientedness, i.e., for cooperation, modesty, caring for the weak, and quality of life (Femininity). The countries listed above perform on Hofstede's masculinity index as follows: Syria (52), Turkey (45), Iraq (70), Germany (66), Poland (64), Czech Republic (57), and Italy (70). From these indicators, we note that Syria, Turkey, and Iraq perform relatively similarly on these indicators and are dissimilar to the host country Germany and other countries in the list.



measured with the respondent's self-reported worries about immigration, crime development and xenophobic hostility in their surroundings, are expected to be less pronounced in the treated group than the control group.

The empirical analysis first presents our estimates of the economic effects of the 2015 ERC. Our results find a large reduction in T-MENA immigrants' unemployment in the year 2015 which we interpret to be consistent with the differential demand shock explanation. We find that this reduction in unemployment dissipated starting in the year 2016 onward. We also report that T-MENA immigrants' self-employment prospects were affected from 2016 onward, i.e. they were less likely to be into the self-employment. We interpret both these findings to be consistent with the labor supply effects associated with refugees' delayed entry into the German labor market. The analysis of the effect heterogeneity suggests that the treatment effects on respondent's unemployment were non-transitory and smaller for T-MENA immigrants with good German skills, whereas, they were larger for first-generation T-MENA immigrants. Finally, our analysis does not yield any results for T-MENA immigrants' weekly hours worked and hourly wages.

Second, we present our results for the social impact of the 2015 ERC. In particular, we consider the ERC's impact on T-MENA immigrants' social worries (i.e. worries about immigration, crime development, and xenophobic hostility) and social assimilation outcomes (i.e. self-identification as German and bonding with the home country). In line with Brunner and Kuhn (2018) and Sola (2018), we find that both existing T-MENA and non-T-MENA immigrants in Germany, on average, reported significant increases in their social worries after the ERC. T-MENA immigrants, however, reported statistically significant smaller increases in their worries compared to non-T-MENA immigrants. We interpret these findings as supporting of the cultural closeness of T-MENA immigrants to the arriving asylum seekers as discussed earlier. Additionally, we study the effects of the ERC on T-MENA immigrants' social assimilation outcomes. We do not find any effect of ERC on T-MENA immigrants' assimilation of German identity. At the same time, however, we find that the T-MENA immigrants increasingly felt connected to home country's culture. We interpret the latter result to be due to the increase in the population of culturally similar immigrants, i.e. refugees,

Finally, we study the impact of 2015 ERC on T-MENA immigrants' subjective well-being (SWB) outcomes. We study whether the ERC impacted respondent's satisfaction towards life and health. Our analysis does not yield any effects on the respondent's SWB. We corroborate our key findings by reporting that the economic and social effects found earlier were stronger in states with larger increases in the share of Middle-Eastern refugees in the German population.

Our study relates and contributes to the strand of literature on the impact of immigration. First, adding to the small but growing literature on the effect of the 2015 ERC in Germany (Gehrsitz and Ungerer, 2018; Jäckle and König, 2017; Kürschner Rauck and Kvasnicka, 2018; Sola, 2018), we investigate the impact of

new immigration flows on existing immigrants. Second, since a large portion of the accepted refugees originated from the Middle-East region, unlike the existing literature, our focus on culturally closer existing T-MENA immigrants is another contribution to the literature.

## 4.2 Background and theoretical underpinnings

### 4.2.1 Germany's Open Border Policy (OBP) announcement and inflow of asylum seekers

Following German Chancellor Angela Merkel's announcement about suspending the Dublin Regulation on the 25th August 2015, Germany stopped sending Syrian asylum seekers to their entry port in the EU and started accepting Syrian refugees (Deutsche Welle, 2015).<sup>79</sup> Several days later, on September 4th, 2015, Germany opened its borders to refugees who had been stuck in the train station of Budapest for days (Blume et al., 2016). Another announcement was made to ensure that there is no upper limit on the number of asylum seekers that Germany should receive (Bröcker and Quadbeck, 2015). In response, around 890,000 asylum seekers arrived in Germany in year 2015 alone (BAMF, 2016b; BMI, 2016). Not all asylum seekers, however, originated from Syria.<sup>80</sup> For example, many originated from Iraq and Afghanistan, the other war-torn countries from the region.<sup>81</sup> Although the number of asylum applications had increased steadily from January 2014, Figure 4.1 shows a sudden and dramatic increase in the second half of 2015, particularly in the last quarter, before dropping at the beginning of 2016 (BAMF, 2015).

Upon arrival, asylum seekers were required to report to a number of dedicated state organizations. Afterwards, they were distributed to different states following the "Königstein Key" ("Königsteiner Schlüssel") criteria.<sup>82</sup> Figure 4.2 shows the state-wise distribution of Middle-Eastern asylum seekers across years.<sup>83</sup> In many states, we observe that the number of asylum seekers from the Middle-Eastern countries multiplied from near-zero to tens of thousands in 2015.<sup>84</sup> Crucial for the experimental set-up is that we

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<sup>79</sup> The Dublin Regulation determines which European country is responsible for examining asylum applications, submitted by persons seeking international protection (BAMF, 2016a).

<sup>80</sup> Other countries that were officially allowed to seek asylum in the EU were Afghanistan and Eritrea.

<sup>81</sup> In Figures 4.A.3 and 4.A.4 in the supplementary appendix, we plot the evolution of the number of refugees and asylum seekers from the three main source countries, Syria, Iraq and Afghanistan. The figures show that asylum seekers from Syria indeed formed the largest group of asylum seekers and refugees to enter Germany. Additionally, in figures 4.A.5 and 4.A.6, we show that the Middle-Eastern asylum seekers (and refugees) together, i.e the asylum seekers (and refugees) from Syria, Iraq and Afghanistan, constituted the largest group among all the asylum seekers (and refugees) that entered Germany.

<sup>82</sup> The Königstein Key criteria was calculated by the Bureau of the Federation-Länder Commission, determines the suitable and fair share of asylum seekers that should be received by each federal state in Germany (BAMF, 2016c). The criteria take into account the tax revenue and the number of inhabitants of each federal state.

<sup>83</sup> Data on asylum seekers for Figure 4.2 are a stock measure of asylum seekers on the last day of each year who receive benefits for asylum seekers in line with the Asylum Seekers' Benefits Act ("Asylbewerberleistungsgesetz"), including for example individuals who have officially applied for asylum in Germany, but are still under the procedure. Those who have got refugee status are excluded from the data. Therefore, these data show roughly the inflow of asylum seekers in each year, or at least in the second half of each year.

<sup>84</sup> It is worth mentioning that not all asylum seekers were accepted as refugees.

observe that the number of asylum seekers was almost unchanged until the year 2014 before dramatically increasing in the year 2015.

The jury is still out on the socio-economic implications of the ERC for the German natives. Although Germany, the largest economy in Europe, played an essential role in the decision to allow the asylum seekers to enter Europe, the crisis produced politically diverse and contradictory discourses (Holmes and Castañeda, 2016). It was extensively covered in the media and drew worldwide political attention (Holmes and Castañeda, 2016). As the Middle-Eastern asylum seekers constituted the largest group among the newly arrived, i.e. half of the first asylum applications in 2015 were filed by asylum seekers from Syria, Afghanistan and Iraq (BAMF, 2016b), we investigate the impact of the ERC for the culturally closer existing Diaspora of immigrants, i.e. T-MENA immigrants in Germany. Figure 4.3 shows the ratio of asylum seekers from the Middle-Eastern countries to the existing T-MENA immigrant population in Germany. We observe that, in many states, the share of Middle-Eastern asylum seekers to the existing T-MENA immigrants increased substantially from near-zero to as high as 48% in 2017. We also observe a substantial variation in the shares across states which are largely due to the varying concentrations of existing T-MENA immigrants. In subsection 4.3, we use the shares of Middle-Eastern refugees in state population as the continuous measures of the treatment under consideration.

#### **4.2.2 Theoretical underpinnings**

Figure 4.4 provides a clear depiction of the analysis that we undertake. We discuss the theoretical origins of the ERC's impact on the economic, social and well-being outcomes of the existing T-MENA immigrants.

#### **Economic effects**

We begin our discussion of the differential treatment effects of the ERC on T-MENA immigrants' economic outcomes. One way to conceptualize the economic effects of the ERC is to consider its impact on the labor demand side of the economy. Upon arrival asylum seekers were granted cash allowances to cover monthly expenses while rent and health insurance were covered by the state (Hauser, 2018). Their consumption decisions can generate additional demand benefiting the economy overall.<sup>85</sup> However, their preference for culturally similar consumer products and services can fuel additional demand for the businesses owned by existing T-MENA immigrants, e.g. ethnic grocery stores, restaurants serving *halal* food, etc.<sup>86</sup> This

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<sup>85</sup> For the discussion of the recent debate among economists on the impact of migration, please *see* Sinn et al. (2016).

<sup>86</sup> Please also refer to the literature suggesting a positive association between immigration and new firm formation. In particular, Olney (2013) finds an insignificant positive effect of low-skilled immigration on the local number of establishments due to an immigrant-induced increase in consumption. Other research on the topic includes Bettin et al. (2018), Jahn and Steinhardt (2018).

additional demand can differentially affect T-MENA immigrants' employment outcomes resulting in increased hiring and reduced unemployment. This demand shock should show up immediately upon asylum seekers' arrival in the country. An alternative explanation for the short-term positive employment effect on T-MENA immigrants is that many were hired to help assist in refugee services (Flüchtlingshilfe) as they had an advantage in understanding the language and culture of incoming refugees.

Middle-Eastern refugees' entry into the German labor market should be the other consideration to conceptualize the differential treatment effects of the crisis on T-MENA immigrants. As noted earlier, the arriving refugee population is among the least educated and low-skilled immigrant groups in Germany, a category previously occupied by T-MENA immigrants. This is supporting argument for our assumption that there is a higher degree of substitution between the Middle-Eastern refugees and existing T-MENA immigrants in the labor market and that the refugees to some extent indeed substitute T-MENA immigrants in the labor market. It follows then that refugees' labor market integration increases the competition for jobs for the existing T-MENA immigrants. Unlike the demand side effect, however, the supply effects of the arriving asylum seekers should occur with a slight delay. First, asylum seekers' entry into the labor market was conditional on their acquisition of the refugee status.<sup>87</sup> The procedure to acquire the refugee status, however, was a time-consuming process. It could take anywhere between few months to a year to complete the process. Figure 4.A.3 plots the number of accepted refugees from Syria, Iraq and Afghanistan in federal-states of Germany. It clearly shows that the number of refugee population begins to increase in the year 2016 onwards, i.e. one year after the recorded increases in asylum inflows. According to BAMF (2019), the number of first-time asylum applications increased substantially in 2016 before dropping again in 2017: 441,899 (2015), 722,370 (2016), 198,317 (2017). In other words, many asylum seekers faced delays in applying for refugee status which further delayed their labor market entry.

Second, refugees were required to be proficient in native language before being seriously considered for formal jobs. A typical language course can take at least a few months to achieve a certain level of proficiency that prepares them for work.<sup>88</sup> Finally, the skills of the refugees were not flexibly trade-able in the host labor market (Brücker, 2018).<sup>89</sup> In many cases, refugees are going through further education and training to be

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<sup>87</sup> Once accepted, the recognized refugees were allocated a temporary or permanent residence with permission to work in Germany. They could enjoy social benefits and were likely to enter the local labor market and compete with existing T-MENA immigrants. Once they enter the labor market, they can apply for social benefits, such as basic insurance for job hunters (Sozialgesetzbuch II). "Jobangeboten für Zugewanderte" provided by the Federal Employment Agency helps and supports refugees to search for a job. More information can be found on the web page of Federal Employment Agency: <https://www.arbeitsagentur.de/unternehmen/arbeitskraefte/gefluechtete-beschaeftigen>

<sup>88</sup> The integration course for new immigrants consists of a 600-hour language course and a 100-hour orientation course. Half of the language course provides basic language knowledge and the subsequent half represents the follow-on language knowledge (BAMF, 2016a).

<sup>89</sup> This consideration provides motivation for the heterogeneous treatment effects with respect to respondent's education. Please see section 4.2 for more details.

accommodated in the labor market (*see* Table 4.1). It is, nevertheless, evident that increasing number of refugees are finding a job in Germany (Brücker, 2018; Zeit Online, 2018). Table 4.1, for example, shows that earlier cohorts of refugees are increasingly finding jobs in Germany, i.e. they increasingly report their labor force status as “working”.<sup>90</sup> Among working refugees, majority reports to be working in low-skilled occupations. Then, following the assumption that there is a higher degree of substitution between T-MENA immigrants and newly arrived refugee immigrants in the labor market, the new entrants are expected to compete away the existing T-MENA immigrants. Consequently, we expect that the differential effects for existing T-MENA immigrants due to the demand shock are transitory and later dissipate depending on the level increases in refugees’ incremental entry into the labor market. Along with the impact of the ERC on extensive margin of labor supply and hourly wages of the existing T-MENA immigrants, our analysis also considers impact on the intensive margin (measured in terms of weekly hours worked). We also investigate whether T-MENA immigrants’ self-employment prospects were affected by the ERC.

It is pertinent to mention the existing strand of research that investigates the labor market impact of Islamist terror events on the existing Islamic immigrants (broadly speaking T-MENA immigrants) in the West. This mention is particularly crucial as a number of Islamist terror events occurred in major European cities shortly around the announcement of the Open Border Policy, e.g. 13 November 2015 Paris attacks, 22 March 2016 Brussels Bombings, 19 December 2016 Berlin truck attack. The literature finds that Islamic immigrants’ labor market outcomes were adversely affected after the terror attacks, a finding the literature interprets to be consistent with increased labor market discrimination against them post-terror events (Dávila and Mora, 2005; Cornelissen and Jirjahn, 2012). Especially, Dávila and Mora (2005) allude to the media’s role in channeling the adverse labor market impact of Islamist terror events on Islamic immigrants in the host countries. They suggest that, after an Islamist terror event, given strong media coverage of the attacks, the visibility of the group that “supposedly” perpetrated these attacks increases. This visibility may intensify the labor market discrimination against Islamic immigrants and further worsen their labor market outcomes. The media coverage of the ERC, however, mostly focused on the stories narrating asylum seekers’ plight and was heavily biased towards the “refugees welcome” side of the political spectrum (Haller, 2017). Given mostly positive coverage of the arriving ME refugees, we do not suspect any post-ERC increase in discrimination against the T-MENA immigrants that resulted in worsening of their labor market outcomes.

## **Social effects**

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<sup>90</sup> The newspaper coverage on the topic also reports that refugees are increasingly entering into the German labor market. They further report that many are being employed in self-employment and service industries (Britzelmeier, 2016; FNP, 2018; Maruhn, 2016; Woldin, 2017). This provides motivation for us to consider the ERC’s impact on respondent’s self-employment outcomes.

Various social outcomes can be affected in the aftermath of the ERC. The existing literature can direct us towards some of these channels. First and the foremost, the extensive news coverage that the ERC received underlined the country's struggle in dealing with the massive and sudden inflows of asylum seekers and might have highlighted immigration as a policy issue (Hatton, 2017). Most of the existing literature, however, focuses on German citizens and shows that in the aftermath of the ERC they reported increased concerns towards immigration policy (Brunner and Kuhn, 2018; Gehrsitz and Ungerer, 2018; Sola, 2018).<sup>91</sup> Therefore, we begin our investigation by studying the respondent's worries about further immigration to Germany and expect that these worries increased among the T-MENA and non-T-MENA respondents after the ERC. Due to cultural closeness of T-MENA immigrants to the newly arrived refugees, however, we expect that T-MENA immigrants may be less worried about the social impact of the ERC.

Second, in opposition to Angela Merkel's Open Border Policy, non-violent protests were held all across Germany. Many violent incidents were also recorded in the vicinity of the refugee centers (Entorf and Lange, 2019; Benček and Strasheim, 2016).<sup>92</sup> Emerging literature shows that targeted violent events can have a detrimental impact on the social outcomes of Islamic communities living in the West (Gould and Klor, 2016; Haddad, 2007; Elsayed and de Grip, 2017; Deole, 2019). Consequently, we consider the impact of the ERC on respondent's worries about general crime development, and xenophobic hostility in their surroundings. The existing literature finds a (moderate) positive or no effect of immigration on crime in the host country (Bell et al., 2013; Bianchi et al., 2012; Butcher and Piehl, 1998; Dehos, 2017; Mastrobuoni and Pinotti, 2011; Spenkuch, 2014). Nevertheless, in public understanding, massive inflows of immigrants are generally feared to exacerbate crime rates. Given that we study respondent's subjective worries about crime development in Germany, we expect that these worries should increase in response to the ERC. However, we expect the increase to be lower among T-MENA immigrants due to their cultural familiarity with the arriving asylum seekers.

Finally, seeing the stories of unconditional support shown to the refugees may re-enforce the belief of German identity among existing T-MENA immigrants. Moreover, due to a sudden and massive inflow of culturally similar refugees to Germany, existing T-MENA immigrants now may feel more connected with their home country and its culture. Therefore, we also test whether existing T-MENA immigrants increased their self-identification as Germans and reported increased connection with their home country and its culture.

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<sup>91</sup> The only other article studying worries about immigration of existing immigrants is Braakmann et al. (2017). Using UK Citizenship Survey for the years 2007-2010, they present a descriptive evidence of immigrants' attitudes towards immigration and compare them with natives.

<sup>92</sup> Benček and Strasheim (2016) provide a geo-referenced event dataset on anti-refugee violence and social unrest in Germany in 2014 and 2015. The descriptive statistics show 443 demonstrations, 195 assault, 157 arson attacks and 763 miscellaneous attacks.

## Well-being effects

It is possible that the crisis has a causal implication independent of its economic and social impacts for the subjective well-being of existing T-MENA immigrants.<sup>93</sup> For example, first, it may be that the existing T-MENA immigrants observe an improved social and family life due to the arrival of culturally similar immigrants to Germany. Their arrival may also be associated with improved access to culturally similar goods that the newly opened businesses offer (e.g. groceries, restaurants, etc.). Additionally, increase in population may improve the quality of family and social life by simply increased opportunity to establish new social networks (friends, family, etc.). On the contrary, there can also be negative externalities for the existing T-MENA immigrants. Following Davila and Mora (2005), we expect that the intense media attention to the "visibly similar" refugee immigrants may induce stress levels and may also adversely affected T-MENA immigrants' general well-being. This is particularly true about the social media coverage of anti-refugee sentiments and the hate speech. Müller and Schwarz (2019), for example, argue that the social media arm of the far-right party Alternative für Deutschland (AfD) successfully generated and exploited anti-refugee sentiments on Facebook in Germany. AfD's social media outreach was broad, with the largest Facebook presence than any other political party in Germany. The authors show that the social media depiction of anti-refugee sentiments and online hate speech had real-life implications; that is, it propagated hate crimes. Consequently, for our study, we consider the following two subjective well-being outcomes: the respondent's life satisfaction and health satisfaction.

Alternatively, the effects associated with ERC on respondent's subjective well-being can be defined as an additive function of the economic and social effects of the ERC. Simply speaking if the crisis implies positive (negative) economic and social effects for the T-MENA immigrants, then the well-being effects can also be expected to be positive (negative), *ceteris paribus*. This additive formulation however yields ambiguity in expected results if both these effects are oppositely directed. In light of the above discussion of the effects of the ERC, the direction of the well-being effects is difficult to expect conclusively.

## 4.3 Data and empirical strategy

We use the German Socio-Economic Panel (SOEP), a wide-ranging representative longitudinal dataset of private households in Germany.<sup>94</sup> The SOEP provides extensive information on respondents' demographic,

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<sup>93</sup> Kürschner Rauck and Kvasnicka (2018), for example, show that there is a strong negative effect of refugee immigration on rental prices.

<sup>94</sup> Socio-Economic Panel (SOEP), data for years 1984-2017, version 34, SOEP, 2019, doi:10.5684/soep.v34. More information about SOEP data can be found in Goebel et al. (2019).

economic, migration-related characteristics, and their well-being. We construct a number of measures of respondents' labor market performance, social worries, social assimilation, and well-being for our study.

For our analysis, we use the latest available SOEP data (version 34, longitudinal data for years 1984-2017). Following Chabé-Ferret (2015), we keep the difference-in-differences (DiD) symmetric around the treatment date by restricting the sample period to 2013-2017, i.e. two years before and two years after the proximate treatment date associated with the year 2015.<sup>95</sup> <sup>96</sup> Our focus on labor market outcomes requires us to further restrict the sample to working-age population (age 18-65). This restriction applies for social and well-being outcomes as well. For the investigation of economic outcomes, we consider respondents active on the labor market, i.e. respondents with labor force status as “working” and respondents registered as “unemployed” with the Employment Office. Another sample restriction is that we focus mainly on the respondents with migrant background only (i.e. first- and second-generation immigrants).<sup>97</sup> We further restrict the sample to non-refugee migrants. Due to the lower number of existing T-MENA immigrants in East Germany, we restrict the analysis to West-German respondents only.<sup>98</sup> <sup>99</sup> <sup>100</sup>

#### ***4.3.1 Experimental set-up and data description***

##### **Treated and control group**

Using the information on respondents' migration background, we construct our experimental groups. Existing immigrants originating from T-MENA region are defined as the treated group. The dummy variable *Treat* takes the value of 1 if the respondent or one of his parents were born in T-MENA countries and 0 otherwise.<sup>101</sup> The choice of a proper control group is crucial for our analysis. We define all the non- T-

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<sup>95</sup> The author shows that the symmetric DiD is consistent in both cases when the selection bias is symmetric and asymmetric around the treatment date.

<sup>96</sup> We assume that the treatment date is imprecise as inflows increased months before the announcement of Open Border Policy, that is, around the middle of the year 2015 (*see* figure 4.1). Baseline results are obtained using the survey year 2015 as the treatment year. In the robustness check subsection, we employ two additional treatment definitions and re-verify the main results.

<sup>97</sup> In Panel (A) of Table 4.A.6 in the supplementary appendix, we show that this sample restriction is not important for the results by separately estimating the results after including natives.

<sup>98</sup> For East Germany, the sample consists of 46 pre-treatment and 33 post-treatment T-MENA observations distributed across survey years. Hence, we exclude East German observations.

<sup>99</sup> Federal states in West Germany include Schleswig-Holstein, Hamburg, Lower Saxony, Bremen, North Rhine-Westphalia, Hessen, Rhineland-Palatinate, Baden-Württemberg, Bavaria, Saarland and Berlin.

<sup>100</sup> The sample contains information on 1195 T-MENA and 5904 non-T-MENA respondents for economic outcomes, 1138 T-MENA and 5619 non-T-MENA respondents for social worries, 1189 T-MENA and 5068 non-T-MENA respondents for social assimilation outcomes, and 800 T-MENA and 4480 non-T-MENA respondents for well-being outcomes.

<sup>101</sup> The SOEP data does not contain information of immigrants from all T-MENA countries living in Germany. The T-MENA countries that SOEP respondents report to originate from are Turkey, Iran, Syria, Afghanistan, Tunisia, Iraq,



MENA immigrants in Germany as the control group which includes respondents of countries from Central and Eastern Europe, Western Europe, America, Asia and Africa. To exclude Middle-Eastern immigrants who entered Germany in response to the increasingly devastating civil wars in the region, we further restrict the sample to immigrants who arrived in Germany before the year 2012.

### Outcome measures

As per defined in Table 4.2, we study the following three sets of outcome measures: (1) economic outcomes, especially labor market performance variables; (2) social outcomes, including social worries and assimilation; and (3) subjective well-being outcomes, essentially respondent's self-reported satisfactions. The labor market performance variables constitute of total four outcomes, i.e. unemployment status (*unemp*), weekly working hours in logarithm (*lhour*), hourly wages in logarithm (*lwage*) and self-employment status (*selfemp*). *unemp* is a dummy variable that equals 1 if the respondent is unemployed and 0 otherwise. *lhour* is a continuous measure of hours worked in a week. *lwage*, also a continuous variable, shows the hourly wage.<sup>102</sup> The variable *selfemp* takes the value of 1 if the respondent is self-employed and 0 otherwise. Table 4.3 presents the pre-treatment means of the outcome variables as a comparison between the treated and control groups. We note that T-MENA immigrants report higher unemployment rates at 19% in our sample than non-T-MENA immigrants of 13.2%. The remaining three economic outcomes, however, are highly comparable between the two groups.

To study the social impact of the 2015 ERC, we consider the impact on respondents' social worries and social assimilation outcomes. The following three social worries are studied (scaled from 1 - very much worried to 3 - not worried): (1) worries about further immigration, (2) worries about crime development and (3) worries about xenophobic hostility in their surroundings. We reverse the order of responses so that the higher values represent greater concerns over social worries. These outcomes are recorded annually and are defined as shown in Table 4.2. The descriptive statistics presented in Table 4.3 suggest that T-MENA immigrants on average report slightly higher social worries than their non-T-MENA counterparts. Additionally, two social assimilation outcomes are considered (scaled from 1 - not at all assimilated to 5 - completely assimilated): (1) "feel German" (*fGerman*) and (2) "connect to the home country" (*connect*). These variables are included in the SOEP questionnaire in 2013, 2014 and 2016 and also, understandably so, are not asked to German natives. Table 4.3 provides an additional confirmation of the claims made in the existing research that T-MENA immigrants are indeed less assimilated in the host culture than their non-T-MENA counterpart. That is, they perform lower on self-identification as German and highly on the

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Morocco, Lebanon, Algeria, Egypt, Somalia, Jordan, Libya, Kurdistan, Yemen, and Palestine. Please note that, although listed in individual responses, countries such as Kurdistan and Palestine do not officially exist.

<sup>102</sup> Hourly wage is calculated as (gross monthly labor income  $\times$  12)/(actual weekly work time  $\times$  52).

outcome measuring their connectedness with home country's culture. We include the analysis on two subjective well-being measures (scaled from 0 - completely dissatisfied to 10 - completely satisfied), the respondents' satisfaction with life (*lsat*) and health (*hsat*). The well-being outcomes are annually recorded in the survey. The statistics presented in Table 4.3 suggest that non-T-MENA immigrants in general report higher satisfaction towards their life and health than T-MENA immigrants.

### Other covariates

The ERC is an exogenous event for existing T-MENA and non-T-MENA immigrants. However, the structure of the existing T-MENA and non-T-MENA immigrants, e.g. age, family structure, education and so on, can be differently correlated with the structure of new arrivals. These individual characteristics can also have some effect on the outcomes of interest and therefore, they should be controlled for. We consider important demographic characteristics of the respondents, such as their age, marital status (single, married or divorced), legally handicapped (yes / no), spatial category (living in the urban or rural region) and federal state of residence. The SOEP also provides information on immigrants' year of immigration to Germany. Using this information, we construct indicators representing immigrants' residence term in Germany. For example, immigrants who have resided in Germany for five or fewer years are defined as short-term residents. Similarly, we define immigrants with the residence of 6 to 20 years as *medium*, and longer than 20 years as *long stay* immigrants. All second-generation immigrants belong to the group of long stay. We also control for whether the respondent is the house-owner and whether the respondent is the household head. Host country's language skill has been shown to be of great importance for immigrants' welfare in the host environment (Angelini et al., 2015). Therefore, we employ two dummy variables, indicating whether the respondent can speak and write German well. We also control for individuals' years of education and working experience.

#### 4.3.2 Empirical strategy

To estimate the causal effect of the 2015 ERC on existing T-MENA immigrants, we implement the difference-in-differences (DiD) estimations.

We estimate the following regression equation:

$$Y_{ist} = \alpha + \sum_{t=2014}^{2017} \beta Year_t + \sum_{t=2014}^{2017} \gamma Treat_i * Year_t + X'_{it} \delta + \lambda_i + \lambda_s + u_{ist}, \quad (4.1)$$

where  $Y_{ist}$  is the outcome variable of individual  $i$  who resides in state  $s$  and responded in year  $t$ . Dummy variable  $Treat_i$  takes the value 1 if the respondent belongs to the treated group (T-MENA immigrants) and

0 otherwise.  $Year_t$  is a set of year dummy variables. The treatment effect is captured by the coefficient on the interaction term between  $Treat_i$  and  $Year_t$  for the year 2015 onward.<sup>103</sup>  $X_{it}$  is a vector of individual-level characteristics, the control variables that can have effects on the outcome variable and potentially affect the treated status of individuals. These include age and its quadratic and cubic term, marital status (dummy variables for married and divorced), legally handicapped, living in urban region, residence time in Germany (dummy variables for medium and long stay), ownership of housing flat, household head, German language skill (dummy variables for good oral and written language), years of education and working experience with their quadratic terms respectively.<sup>104</sup> To control for individual time-invariant factors that are relevant for outcomes and the treated status,  $\lambda_i$  captures the individual-specific fixed-effects.  $\lambda_s$  is a set of dummies indicating respondent's state of residence.  $u_{ist}$  is the error term.<sup>105</sup>

In Section 4.1, we test the common trend assumption, an important identifying assumption of the DiD estimation, which suggests that both treated and control group should follow the same trend in the absence of treatment. It must be admitted that it is difficult to claim that the control group was not impacted in response to the ERC. If the control group is affected in the same direction as the treatment group, we can interpret our estimates to be downward biased. But if the direction of the effect for the control group is unclear, we suggest that the estimated effects should be interpreted simply as average differences in treatment effects between T-MENA and non-T-MENA immigrants. Another identifying assumption is that no other shocks should occur at the same time as the treatment (for example, Islamist terror attacks as noted earlier). To address this concern of coarse sources of variation and to exploit the time-variation in the treatment effect, in subsection 4.4.3, we revisit our key findings by using a continuous measure of the treatment, i.e. state-level variations in the share of Middle-Eastern refugees in the German population. If the impact of the ERC is larger in states with larger increases in the share of Middle-Eastern refugees in the population, the concern of Islamist terror events is addressed.

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<sup>103</sup> Figure 4.A.3 in the supplementary appendix provides support for our assumption that 2015 was indeed the treatment year. Although some asylum seekers entered Germany prior to 2015 as shown in Figure 4.A.4, they obtained the refugee status later in years 2015 onward due to the delay in asylum procedures.

<sup>104</sup> Note that the year fixed effects account for linear age effects and the linear age term is, therefore, dropped from the estimation.

<sup>105</sup> Despite the binary/ordered nature of many outcome variables, we employ linear DD regressions for all outcome variables for the ease of interpretation.

## 4.4 Results

### 4.4.1 Main results

This section discusses the common trend assumption and provides supportive evidence that the changes in outcomes are indeed induced by the ERC. The results are presented in Table 4.4.<sup>106 107 108</sup> We make the following three observations. First, we find no significant differences in outcomes between the years 2013 and 2014, indicating that our treated and control groups follow the same trend in the pre-treatment period, a supporting evidence of the common trend assumption.

Second, we observe the effects associated with treatment year, i.e. the year 2015. We begin our reporting with the discussion of economic effects presented in columns (1)-(4). Column (1) reports that T-MENA immigrants observed a reduction in their unemployment in the survey year 2015. No other economic outcomes are affected in immediate response to the massive inflows of Middle-Eastern refugees in the year 2015. In columns (5)-(7) of Table 4.4, we present the estimates for respondent's social worries. Main results suggest that the T-MENA immigrants reported statistically significant lower increases in their social worries about immigration policy and xenophobic hostility in their surrounding than non-T-MENA immigrants.<sup>109</sup> Finally, we consider the impact of the ERC on the respondent's self-reported satisfaction with their life and with health. The results do not indicate any differential effects of the ERC on the respondent's subjective well-being outcomes.

Third, we observe whether the ERC's impact persisted as years passed by, i.e. year 2016 onward. Column (1) of Table 4.4 first reports that the unemployment effects observed in 2015 dissipated starting in 2016. Second, the results in column (4) report a sizeable reduction in the self-employment prospects for T-MENA immigrants in the years 2016 onward. We interpret both these findings to be consistent with the Middle-

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<sup>106</sup> Turkish Diaspora of immigrants being the largest group of individuals among the T-MENA group, we separately consider the impact of ERC on Turkish immigrants in Germany. The non-T-MENA immigrants are assumed to be the control group. The results presented in Table 4.A.1 in the supplementary appendix show that the results are qualitatively similar to the baseline results.

<sup>107</sup> In Table 4.A.2 in the supplementary appendix, we re-estimate the results after extending sample period to include pre-treatment years to as early as the year 2011. For most specifications we find no significant differential trend between treated and control group before the crisis.

<sup>108</sup> In Table 4.A.9 in the supplementary appendix, we show an extended results table with coefficients for all covariates.

<sup>109</sup> A growing strand of literature studies the political response to the ERC (Gehrsitz and Ungerer 2018). They note that, in response to the ERC, German citizens reported an increase in anti-immigration sentiments which were successfully exploited by the far-right parties in elections. Other papers on the topic include Barone et al (2016), Brunner and Kuhn (2018), Gerdes and Wadensjö (2008), Harmon (2018), Otto and Steinhardt (2014) and Halla et al. (2017). In our setting, the expected results on political outcomes are unclear as far-right parties in Germany (Alternative für Deutschland - AfD, Nationaldemokratische Partei Deutschlands - NPD, Die Republikaner - REP and Deutsche Volkunion - DVU) support anti-immigration policies and may be opposed by all immigrants. Nevertheless, building on SOEP questions, we ask whether their party preferences, intensity of party preference, and the likelihood of supporting a far-right party (AfD/NPD/REP/DVU) are affected by the treatment. The results presented in Table 4.A.3 in the supplementary appendix suggest that party preference and intensity of party preference were not affected by the 2015 ERC. However, we find that the T-MENA immigrants were increasingly less likely to support a far-right party after the ERC, possibly an indication of AfD's changed stance on immigration.

Eastern refugees' incremental and delayed entry into the German labor market. Furthermore, we find that compared to non-T-MENA immigrants the smaller increases in T-MENA immigrants' social worries found earlier strengthened in the year 2016. The reduction in respondent's worries about immigration policy remained statistically significant in the year 2017 as well, whereas, worries about crime and about xenophobic hostility lost their statistical significance. Next, we discuss social assimilation of T-MENA immigrants in columns (8)-(9).<sup>110</sup> We do not find any statistical significance to our result on the respondent's self-identification as German. Nevertheless, the respondent's self-reported connectedness to home country culture increased for the T-MENA immigrants post-ERC. We interpret this finding as a result of increased opportunities for T-MENA immigrants due to substantial increases in the population of culturally similar individuals. Finally, our results regarding subjective well-being outcomes show that they were not differentially impacted in the aftermath of the ERC.

In Table 4.5, we present the estimates of the average treatment effects associated with the Open Border Policy. For this exercise, we generate a dummy variable *Post* which takes the value 1 if the respondent was interviewed after the announcement of the Open Border Policy on the 25<sup>th</sup> August 2015 and 0 otherwise. The estimate presented in column (1) reports no statistically significant reduction in T-MENA immigrants' unemployment. The estimates presented in column (4) suggest that T-MENA immigrants' self-employment prospects reduced by 0.02, a sizeable reduction considering pre-treatment self-employment possibility of around 0.068. The results for social outcomes and subjective well-being are presented in columns (5)-(11). It is noteworthy that the coefficient on the *Post* dummies in columns (5)-(7) are statistically significant and positive for all the three social worries. That is, we find that both treated and control group reported increased social worries after the ERC. The estimated coefficient of the interaction term is statistically significant negative for all three outcome measures of social worries and it is smaller in absolute value in comparison with the estimate of *Post*, which indicates that the post-ERC increase in worries is smaller for T-MENA immigrants. As T-MENA immigrants are assumed to be culturally closer to the arriving refugees, we interpret these results to suggest that they are relatively less worried about the social impact of the ERC. Columns (8)-(9) provide show that T-MENA immigrants' assimilation outcomes were also impacted in the aftermath of the ERC. The results suggest that the T-MENA immigrants increased their self-identification as Germans by 0.107 points, about 3.4% of the pre-treatment mean in the aftermath of the ERC. Additionally, we find that they reported increased bonding with their home country's culture by 0.174 points, approximately 4.8% of the pre-treatment mean. Last but not least, columns (10)-(11) report the

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<sup>110</sup> We also investigate whether immigrant's return migration intention were affected in the aftermath of the ERC. Building on SOEP questions, the results presented in Table 4.A.4 in the supplementary appendix show that T-MENA immigrants' decision to stay in Germany was not impacted from other immigrants, however, their intended years of stay was positively affected, i.e. T-MENA immigrants increased their projected stay (in years) in Germany by 9% after the ERC.

results for the respondent's subjective well-being outcomes. In both cases, we find no significant effect of the ERC on satisfaction.

#### ***4.4.2 Effect heterogeneity***

The 2015 ERC brought a huge number of young, low-educated, and largely male refugees from the Middle-East. According to the asylum applications in 2015, 80% are younger than 35 and the overall sex ratio is 2.24 (BAMF, 2015). About 7% of first-time asylum applicants had no formal schooling, 20% attended school for a maximum of four years and 32% stated a general secondary school as the highest educational institution they had attended (Rich, 2016). By construction, refugees were first-generation immigrants as they were born in the source countries and had poor German skills. Existing T-MENA immigrants having similar characteristics may be more affected by the crisis than others. Therefore, we investigate whether the treatment effects differ by gender, education, age, German language proficiency, and immigration status by including a triple interaction between treated group *Treat*, treatment status *Post* and one of the above-mentioned characteristics.

We generate a dummy variable *Female* which takes the value of 1 if the respondent is female and 0 otherwise. For education, we define individuals with more than 12 years of education to be high-educated. The dummy variable *High Education* takes the value of 1 if the respondent is highly educated and 0 otherwise. The individuals of age 35 or younger are classified as young. The dummy variable *young* takes the value of 1 if the respondent is young and zero otherwise. An individual is denoted to be proficient in German language if he/she reports to have very good written and/or oral German skills. Finally, we also study whether the treatment effects are heterogeneous with respect to respondent's immigration status, i.e. whether the respondent is a first-generation or second-generation immigrant. This consideration is important as older cohorts of immigrants may be less vulnerable to the treatment effects as their longer stay in the host environment can explain their higher economic and cultural integration.<sup>111</sup>

Results of effect heterogeneity are shown in Table 4.A.5 in the supplementary appendix. We observe that we do not find any significant differences in the treatment effects in most specifications. Some exceptions to our baseline estimates include the results in column (3) of panel (A) which suggests that the treatment effect on T-MENA immigrants' hourly wages is smaller for female T-MENA immigrants than males. Columns (7) and (9) show that the treatment effect on the respondent's worry about xenophobic hostility and on their self-reported connectedness with home country was smaller for female respondents than their male counterparts. In panel (B), the results find that the treatment effects on the respondent's weekly hours

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<sup>111</sup> Braakmann et al. (2017), for example, find that the old immigrants in the UK, like the natives, oppose further immigration whereas new immigrants are more in favor. Our findings do not support these findings.

worked were larger for high-educated T-MENA immigrants while for all other specifications we do not find any differences. Results in panel (C) indicate that the treatment effects on self-reported connectedness to home country's cultures for the young T-MENA respondents were larger. The findings of panel (D) show that the treatment effects were smaller for T-MENA immigrants with better German language skills on their unemployment, weekly hours, worries about immigration and their self-reported self-identification as German. The treatment effect on respondent's hourly wages was larger for the respondents with better German skills. Finally, panel (E) notably shows that the treatment effects were larger for first-generation T-MENA immigrants' unemployment and on their life satisfaction.

#### **4.4.3 Treatment Intensity**

In main specification, we identified the treatment effect identical for all German federal states. In this section, instead, we use a continuous variable to measure the treatment intensity. We implement the state-level share of Middle-Eastern refugees in German nationals.<sup>112</sup> To distinctly quantify the unemployment effects associated with the immediate demand effects induced by the crisis, we re-estimate the baseline results by restricting the sample to survey years 2013 and 2015. The results are presented in Panel A of Table 4.6. Additionally, to be close to the baseline estimates and to show the unemployment effects associated with refugees' delayed labor market integration, we re-estimate our results by restricting the sample to survey years 2013 and 2016 (Panel B).<sup>113</sup> A broad reading of the results suggest that we obtain qualitatively similar results to our baseline estimates.

Column (1) in Panel (A) shows that T-MENA immigrants observed statistically significant reduction in their unemployment in year 2015 in states with larger increases in the share of Middle-Eastern refugees of German population. In terms of magnitude, one standard deviation increase in the share of Middle-Eastern refugees, which is equivalent to an increase of 0.1 percentage points (0.001 points), results in a lower unemployment rate for T-MENA immigrants by 0.02 points, which is about 11% of the pre-treatment mean of the treated (*see* Table 4.3). The results presented in column (1) of Panel (B) provide supporting evidence to our earlier finding that the reduction in unemployment observed in 2015 dissipated by 2016. Additionally, the results of Panel (B) find that a similar increase in the share of Middle-Eastern refugees (by 0.001 points) leads to a lower self-employment possibility for T-MENA immigrants by 0.0035, which is about 5.2% of the pre-treatment means of the treated.

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<sup>112</sup> In all observed years, there is a positive number of Middle-Eastern refugees, but the substantial variation in the ratio across time arises due to the ERC. See Figure A-1 in the online appendix.

<sup>113</sup> In Table 4.A.10, we re-estimate the baseline results shown in Table 4.4 by applying the sample restrictions used for the Treatment intensity checks.

The results of column (5) of Panel (A) suggest that the change in the Middle-Eastern refugees decreases T-MENA immigrants' worry about immigration statistically significantly. In terms of magnitude, for the increase in the share of Middle-Eastern refugees by 0.001 points, T-MENA's worry about immigration is 0.0084 smaller than non-T-MENA and the difference is about 4.2% of the pre-treatment mean for the treated. Columns (5) to (7) of Panel (B) further show that compared to non-T-MENA immigrants the increase in Middle-Eastern refugees between 2013 and 2016 has a negative effect on T-MENA's worries about immigration, crime and hostility. As the share of Middle-Eastern refugees rises by 0.001, T-MENA immigrants' worry is smaller than non-T-MENA by 0.047 about immigration, 0.027 about crime and 0.027 about hostility, that are equivalent to around 2.3%, 1.2% and 1.3% of the pre-treatment means for T-MENA immigrants, respectively. Finally, the results in column (9) of Panel (B) suggests that T-MENA immigrants feel more connected with their home country's culture in the aftermath of increase of the share of Middle-Eastern refugees in state population. In terms of magnitude, T-MENA immigrants report to be more connected to the home country than non-T-MENA immigrants by 0.031 points which is about 0.8% pre-treatment means for the treated. Similar to the main results, no significant differential effect on well-being outcomes is found between T-MENA and non-T-MENA immigrants. Since the variation in the share of refugees is at the state level, we further verify our results after clustering the standard errors at the state level. Due to the small number of clusters (only eleven states), we employ wild bootstrap tests. The results are qualitatively similar to the ones presented above (see Table 4.A.11 in the supplementary appendix).

It is, however, possible that the use of recognized refugees may lead to an endogeneity problem, since the distribution of refugees across states may be correlated with some time-variant (un)observable factors. These factors include local delays in application processes, difficulties in entering employment, anti-immigrant crimes and so on and can bias our results. Therefore, in Panel (C) and (D) of Table 4.6, we consider the share of Middle-Eastern asylum seekers in German population as the new measure of the treatment.<sup>114</sup> The results are broadly in line with the ones reported above.

#### **4.4.4 Robustness checks**

##### *Alternative definitions of experimental groups*

We test the robustness of our main results by considering German natives as the new control group. The main results are presented in panel (A) of Table 4.A.6 in the supplementary appendix. The results are qualitatively similar to the baseline results. To check the validity of our claim that T-MENA immigrants were differently impacted by the ERC than other immigrants in Germany, we consider the non-T-MENA

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<sup>114</sup> Figure A-2 in the online appendix presents the state-level shares of Middle-Eastern asylum seekers in German population across years.



immigrants as the new treated group. The control group for this analysis is German natives. Therefore, we can compare the effect of ERC between T-MENA and non-T-MENA immigrants, since the control group is the same in these two panels. The results for non-T-MENA immigrants presented in panel (B) of Table 4.A.6 show, unlike our baseline findings, no changes in non-T-MENA immigrants' unemployment. Their self-employment prospects show a small reduction in 2015, but CTA does not hold for this outcome. We report that non-T-MENA immigrants even reported increases in social worries than their native counterparts, which is contrary to our baseline results.

#### *Alternative treatment definitions*

Next, we qualify the main findings with consideration to alternative treatment definitions. In equation 4.1, the effect associated with the survey year 2015 is considered to be the baseline treatment effect of interest. This treatment definition may seem rather vague as the inflow of asylum seekers peaked around the second half of the year 2015. In this subsection, we divide the sample for the year 2015 into pre-treatment and post-treatment sample and re-verify the baseline results. We do this by using two alternative treatment definitions. First, we divide the 2015 sample based on the date of the OBP announcement. This qualification allows us to estimate the treatment effect associated with the OBP announcement, which helps us avoid relying entirely on the interaction effect for the year 2015, as is done in the baseline results. To do this, we generate a dummy variable *Before\_OBP\_2015* taking the value of 1 if the survey observation in the year 2015 is recorded before the OBP announcement on the 25th August 2015 and 0 otherwise. Similarly, we generate another dummy variable *After\_OBP\_2015* taking the value of 1 if the observation is recorded after the OBP announcement in the year 2015 and 0 otherwise. In place of the baseline interaction effect ( $Treat*Year2015$ ), we now estimate two separate interaction effects ( $Treat*Before\_OBP\_2015$  and  $Treat*After\_OBP\_2015$ ). Table 4.A.7 in the supplementary appendix shows the results.

However, this alternative faces two issues that need discussion. First, as discussed earlier, the inflow of refugees immigrants to Germany increased months before the OBP announcement, i.e. approx. around the first half of 2015. Due to the uncertainty around the treatment date, the common trend assumption may not hold as the treatment associated with the inflow of asylum seekers partly occurs in the pre-treatment period, i.e. before the OBP announcement. This is indeed supported by the results presented in Table 4.A.7. In the table, we find that, in most specifications the common trend assumption holds, except in column (1). That is, the estimated interaction effects for the pre-treatment interaction term ( $Treat*Before\_OBP\_2015$ ) are not statistically significant. In column (1), however, the common trend assumption fails. We interpret this discrepancy to be in line with the effects associated with the peak inflow of refugees observed towards the middle of the year 2015 and revisit later in the subsection.

Second, the number of SOEP observations recorded after the OBP announcement in the year 2015 is very small. In total, SOEP interviewed only 103 T-MENA individuals in the months following the OBP announcement in the year 2015, whereas this number for non-T-MENA individuals is 601. The small sample size can affect the precision of our estimates of the post-treatment interaction effects. In column (1) of the table, we find that the coefficient on the post-treatment interaction term *Treat\*After\_OBP\_2015*, though larger in terms of magnitude than the pre-treatment interaction term, is not statistically significant. The standard error, usually an indicator of the precision of the estimate, is twice as large as the baseline estimate, largely due to the reduced sample size post-OBP announcement.

We address the concerns raised above by employing an additional treatment definition. To do this, we exploit an observation noted earlier. That is, we know that the inflow of asylum seekers to Germany increased approximately around the middle of the year 2015 (please see the discussion of figure 4.1 above). Therefore, we generate two dummy variables indicating survey observations recorded in the first half of the year 2015 (January-June) and second of the year 2015 (July-December). Table 4.A.8 shows the results for the interaction effects estimated separately for these two dummy variables (*Treat\*Before\_Inflow\_2015* and *Treat\*After\_Inflow\_2015*). We make the following two observations. First, in all specifications, we find supporting evidence of common trend assumption, including column (1). This observation suggests that we do not find an effect of the inflow of immigrants in the first half of the year 2015 (pre-treatment period), supporting evidence of eyeball observation made in figure 4.1. Second, we observe that the interaction effects associated with the post-treatment period (*Treat\*After\_Inflow\_2015*) are now statistically significant and much larger in magnitude (-0.072) than the baseline estimates, indicating immediate and substantial effects associated with the inflow of refugee immigrants to Germany (post-treatment). In summary, we conclude that despite the uncertainty concerning the exact definition of the treatment (is it the OBP or the point in time when refugee inflows jumped), the estimates presented above attest to the robustness of the main findings of the paper.

#### **4.5 Conclusion**

Socio-economic integration of immigrants continues to be a topic of great importance in the light of increased migration to western countries. Although huge literature already exists on the topic, whether the inflow of new immigrants affects existing immigrants has been rarely analyzed. Using the 2015 ERC as a natural experiment that brought a huge number of asylum seekers from Middle-Eastern countries, we study the effects of their arrival on economic and social outcomes of the existing T-MENA immigrants in Germany.

With DiD framework, our results first suggest an immediate, yet transitory reduction in the unemployment of the T-MENA immigrants. We find that the treatment effects were much larger and long-lived for T-MENA immigrants with good German language skills, whereas, first-generation immigrants observed smaller effects. Second, we find that although both T-MENA and non-T-MENA immigrants showed increased worries about immigration, crime, and xenophobic hostility after the ERC, T-MENA immigrants reported significantly smaller increases in these worries. Furthermore, we study the effects of the 2015 ERC on T-MENA immigrants' social assimilation outcomes. We find that T-MENA immigrants reported to bond more to their home culture, while their assimilation of German identity was unaffected. Our findings do not indicate any effects on T-MENA immigrants' life satisfaction and health satisfaction. This peculiar finding underlines the pertinence of other channels pertinent to their well-being in the aftermath of the refugee crisis. The key findings are corroborated by performing numerous checks.

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## Appendix

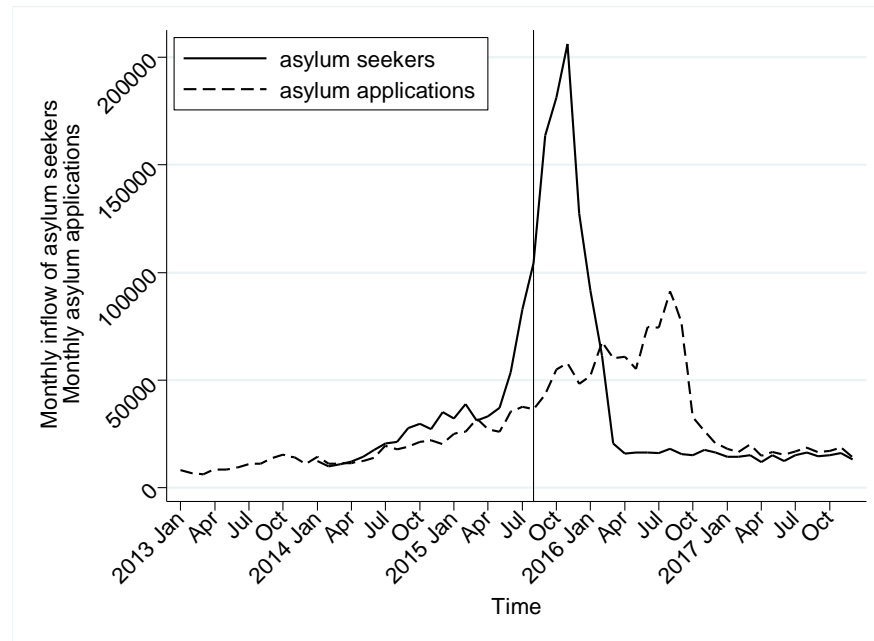
**Table 4.1: Descriptive statistics of refugees**

| Year of immigration                    |                     | 2013  | 2014  | 2015  | 2016  | 2017  | All   |
|--|---------------------|-------|-------|-------|-------|-------|-------|
| <b>Country of origin</b>               |                     |       |       |       |       |       |       |
| Afghanistan                            | # of refugees       | 96    | 168   | 535   | 106   | 3     | 908   |
| Iraq                                   | # of refugees       | 72    | 114   | 793   | 193   | 5     | 1,177 |
| Syria                                  | # of refugees       | 239   | 878   | 2,773 | 478   | 37    | 4,405 |
| Eritrea                                | # of refugees       | 40    | 153   | 142   | 40    | 0     | 375   |
| All                                    | # of refugees       | 725   | 1,739 | 4,846 | 1,009 | 48    | 8,367 |
| <b>Middle Eastern refugees</b>         |                     |       |       |       |       |       |       |
| Education                              | In # of years       | 10.05 | 10.15 | 10.02 | 9.58  | 9.94  | 9.98  |
| Working experience                     | In # of years       | 8.26  | 8.48  | 8.06  | 6.99  | 6.01  | 8.01  |
| Undergoing education and training      | Share of population | 0.032 | 0.038 | 0.042 | 0.034 | 0     | 0.039 |
| <b>Labor force status (Total 100%)</b> |                     |       |       |       |       |       |       |
| Working                                | Share of population | 0.277 | 0.225 | 0.108 | 0.070 | 0     | 0.142 |
| Unemployed                             | Share of population | 0.151 | 0.119 | 0.110 | 0.048 | 0.021 | 0.107 |
| Non-Working                            | Share of population | 0.572 | 0.655 | 0.781 | 0.882 | 0.979 | 0.751 |

Source: SOEP v34, 2013-2017, own calculations.

Note: In this show, we restrict the sample to survey respondents with refugee background. The refugees were mostly included in the survey years 2016 and 2017. Please note that these respondents are asylum seekers with an accepted “refugees status”.

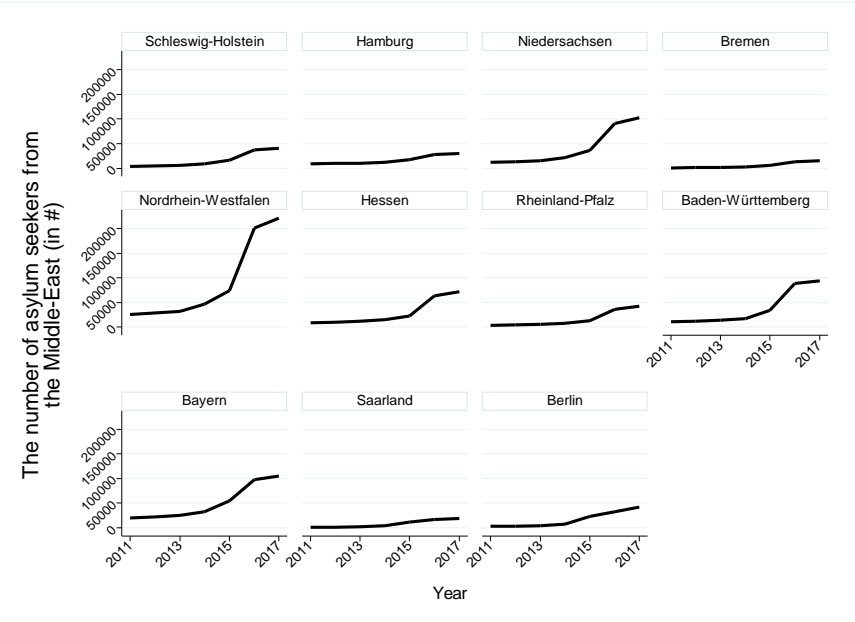
**Figure 4.1: Asylum seekers & asylum applications in Germany**



Source: Federal Office for Migration and Refugees.

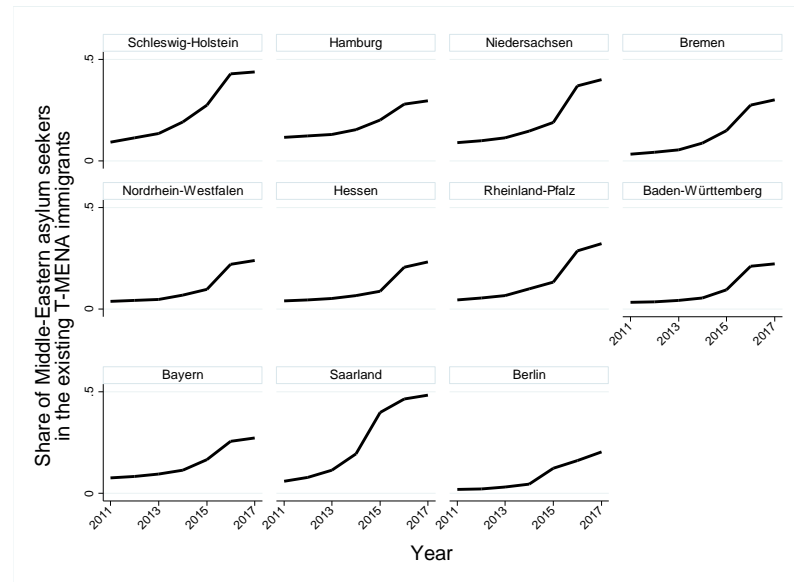
Notes: This figure shows EASY data on monthly inflow of asylum seekers and asylum applications in Germany from 2014 to 2017. Note that the data on asylum applications is available from 2013 onwards. The vertical line represents the timing of the Open Border Policy announcement.

**Figure 4.2: State-wise distribution of Middle-Eastern asylum seekers**



Data source: Federal Statistical Office, own calculations.  
 Notes: This figure shows the state-wise distribution of asylum seekers across the years. The numbers are shown for only West-German states. The East-German states are not shown as they are not used for the empirical analysis due to fewer numbers of existing T-MENA immigrants.

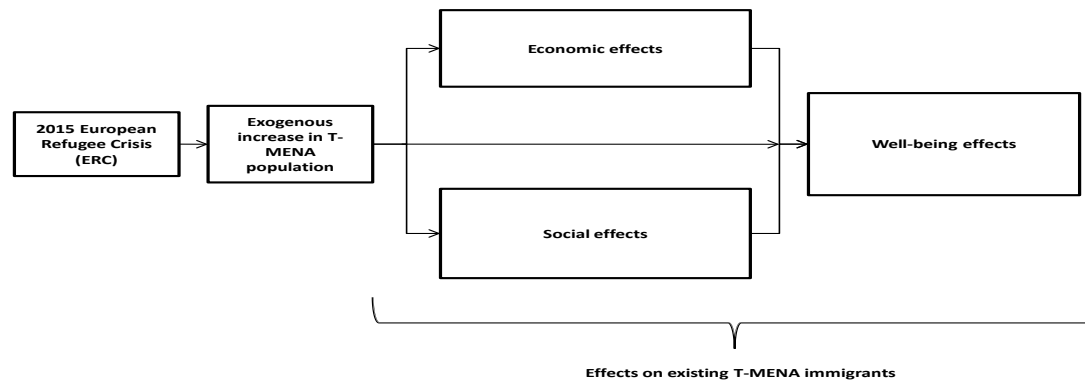
**Figure 4.3: Share of Middle-Eastern asylum seekers in the existing T-MENA immigrants**



Data source: Federal Statistical Office, own calculations.

Notes: This figure shows the ratio of Middle-Eastern asylum seekers to the existing T-MENA immigrants in Germany. These asylum seekers include recognized refugees and other asylum seekers currently under the application process.

**Figure 4.4: Impact of ERC on existing T-MENA immigrants**



Notes: This figure depicts the analysis that we undertake in this chapter. The ERC increases the number of MENA population in Germany, affecting existing T-MENA immigrants' economic, social and well-being outcomes.

**Table 4.2: Outcome measures**

| Variable           | Explanation                        | Range of responses                                      |
|--------------------|------------------------------------|---|
| Economic impact    |                                    |   |
| Unemp              | Unemployment                       | 0 (No) / 1 (Yes)  |
| Lhour              | Log weekly working hours           | Continuous number                                       |
| Lwage              | Log hourly wages                   | Continuous number                                       |
| Selfemp            | Self-employment status             | 0 (No) / 1 (Yes)  |
| Social impact      |                                    |   |
| Immigration        | Worries about immigration          | 1 (No concerns) - 3 (Very concerned)                    |
| Crime              | Worries about crime development    | 1 (No concerns) - 3 (Very concerned)                    |
| Hostility          | Worries about xenophobic hostility | 1 (No concerns) - 3 (Very concerned)                    |
| German             | Feel German                        | 1 (Not at all) - 5 (Completely)                         |
| Connect            | Connect to the home country        | 1 (Not at all) - 5 (Completely)                         |
| Well-being effects |                                    |   |
| Lsat               | Life satisfaction                  | 0 (Completely dissatisfied) - 10 (Completely satisfied) |
| Hsat               | Health satisfaction                | 0 (Completely dissatisfied) - 10 (Completely satisfied) |

Notes: This table shows the description of all outcome measures in three categories, i.e. economic impact, social impact and well-being effects of the 2015 ERC on existing T-MENA immigrants, including each variable's explanation and its value range of responses.

**Table 4.3: Descriptive statistics**

|                                    | <b>Treated: T-MENA immigrants</b>     |                |
|------------------------------------|---------------------------------------|----------------|
|                                    | <b>Control: non-T-MENA immigrants</b> |                |
|                                    | <b>Treated</b>                        | <b>Control</b> |
| Outcome measures                   |                                       |                |
| A. Economic impact                 |                                       |                |
| Unemployment status                | 0.200                                 | 0.131          |
| Log weekly hours worked            | 3.473                                 | 3.454          |
| Log hourly wage                    | 2.339                                 | 2.440          |
| Self-employment status             | 0.069                                 | 0.064          |
| B. Social impact                   |                                       |                |
| Worries about immigration          | 2.012                                 | 1.839          |
| Worries about crime development    | 2.255                                 | 2.067          |
| Worries about xenophobic hostility | 2.126                                 | 1.911          |
| Feel German                        | 3.184                                 | 3.540          |
| Connected to home country          | 3.639                                 | 3.232          |
| C. Well-being effects              |                                       |                |
| Life satisfaction                  | 7.293                                 | 7.612          |
| Health satisfaction                | 7.172                                 | 7.308          |
| Explanatory variables              |                                       |                |
| Age                                | 36.444                                | 39.449         |
| Urban                              | 0.869                                 | 0.780          |
| Married                            | 0.655                                 | 0.627          |
| Education                          | 10.820                                | 11.899         |
| Work experience                    | 11.638                                | 14.464         |
| German proficiency: Oral           | 0.763                                 | 0.678          |
| German proficiency: Written        | 0.710                                 | 0.605          |
| HH relationship: Head              | 0.590                                 | 0.587          |
| Owns the house                     | 0.270                                 | 0.347          |
| Divorced                           | 0.109                                 | 0.104          |

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|   |       |       |
|---|-------|-------|
| Disabled  | 0.059 | 0.040 |
| Years since migration: Medium-term  | 0.270 | 0.477 |
| Years since migration: Long-term  | 0.702 | 0.466 |
| State-level variables (11 German states): Data source: Federal Statistical Office |       |       |
| Share of Middle-Eastern refugees in<br>German population (Pre-treatment)          | 0.002 | 0.001 |
| Share of Middle-Eastern refugees in<br>German population (Post-treatment)         | 0.009 | 0.006 |

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Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: This table shows the mean value of all dependent and explanatory variables in the pre-treatment period, i.e. in years 2013 and 2014. For explanatory variables, we obtain the statistics after using the sample restriction used for economic outcomes.



**Table 4.4: Lead and lag effects**

|                  | (1)                 | (2)               | (3)               | (4)                    | (5)                  | (6)                 | (7)                | (8)                             | (9)                     | (10)               | (11)              |
|------------------|---------------------|-------------------|-------------------|------------------------|----------------------|---------------------|--------------------|---------------------------------|-------------------------|--------------------|-------------------|
|                  | Economic impact     |                   |                   |                        | Social impact        |                     |                    |                                 | Well-being effects      |                    |                   |
|                  | Unemployment status | Log weekly hours  | Log hourly wages  | Self-employment status | Immigration          | Worries about Crime | Hostility          | Social assimilation Feel German | Connect to Home country | Satisfactions Life | Health            |
| Treat×Year2014   | -0.007<br>(0.015)   | 0.013<br>(0.019)  | -0.001<br>(0.022) | 0.002<br>(0.008)       | -0.031<br>(0.054)    | -0.002<br>(0.050)   | -0.044<br>(0.053)  | -0.046<br>(0.063)               | 0.057<br>(0.061)        | -0.076<br>(0.110)  | 0.041<br>(0.137)  |
| Treat×Year2015   | -0.038**<br>(0.018) | 0.028<br>(0.024)  | -0.022<br>(0.024) | -0.001<br>(0.010)      | -0.164***<br>(0.056) | -0.055<br>(0.051)   | -0.092*<br>(0.053) |                                 |                         | -0.066<br>(0.109)  | -0.078<br>(0.140) |
| Treat×Year2016   | 0.001<br>(0.019)    | -0.006<br>(0.026) | -0.005<br>(0.025) | -0.018*<br>(0.011)     | -0.226***<br>(0.059) | -0.2***<br>(0.052)  | -0.12**<br>(0.056) | 0.074<br>(0.072)                | 0.215***<br>(0.070)     | -0.028<br>(0.110)  | 0.097<br>(0.142)  |
| Treat×Year2017   | -0.012<br>(0.020)   | 0.033<br>(0.027)  | -0.029<br>(0.027) | -0.016<br>(0.012)      | -0.202***<br>(0.059) | -0.063<br>(0.055)   | -0.070<br>(0.057)  |                                 |                         | -0.144<br>(0.111)  | 0.059<br>(0.150)  |
| Observations     | 19,306              | 16,817            | 16,725            | 19,306                 | 18,445               | 18,445              | 18,445             | 11,248                          | 11,248                  | 14,161             | 14,161            |
| # of respondents | 7,099               | 6,401             | 6,371             | 7,099                  | 6,757                | 6,757               | 6,757              | 6,257                           | 6,257                   | 5,280              | 5,280             |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the lead and lag effect of the ERC in Germany. Our treated group consists of T-MENA immigrants and the control group is comprised of non-T-MENA immigrants in Germany. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. We analyze the economic impact of ERC, using as dependent variables unemployment status (column 1), a logarithm of weekly working hours (column 2), a logarithm of hourly wages (column 3) and self-employment status (column 4). The social outcomes include social worries about immigration (column 5), about crime development (column 6) and about xenophobic hostility (column 7). In columns 8 and 9, we consider the respondent's self-identification as German ("feel German") and connection to home country. The impact of ERC on their Well-being outcomes is investigated with outcome measures of life satisfaction (column 10) and health satisfaction (column 11). The explanatory variables shown here are the interaction terms including the treatment indicator Treat and survey year indicators. In each specification, we control for the respondent's age (in level, quadratic and cubic terms), rural area, marital status, education (in level and quadratic term), working experience (in level and quadratic term), language skill (oral and written German), household head, house ownership, disabled, and stay in Germany. Additionally, we control for the state and year fixed effects. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

**Table 4.5: Impact of ERC on existing T-MENA immigrants in Germany**

|                  | (1)                 | (2)               | (3)               | (4)                    | (5)                  | (6)                 | (7)                 | (8)                             | (9)                     | (10)               | (11)             |
|------------------|---------------------|-------------------|-------------------|------------------------|----------------------|---------------------|---------------------|---------------------------------|-------------------------|--------------------|------------------|
|                  | Economic impact     |                   |                   |                        | Social impact        |                     |                     |                                 | Well-being effects      |                    |                  |
|                  | Unemployment status | Log weekly hours  | Log hourly wages  | Self-employment status | Immigration          | Worries about Crime | Hostility           | Social assimilation Feel German | Connect to Home country | Satisfactions Life | Health           |
| Post             | -0.002<br>(0.013)   | 0.002<br>(0.018)  | 0.011<br>(0.017)  | 0.002<br>(0.006)       | 0.372***<br>(0.036)  | 0.114***<br>(0.033) | 0.199***<br>(0.034) | -0.062<br>(0.059)               | 0.053<br>(0.062)        | 0.055<br>(0.072)   | 0.099<br>(0.083) |
| Treat × Post     | 0.006<br>(0.013)    | -0.002<br>(0.017) | -0.013<br>(0.016) | -0.020**<br>(0.008)    | -0.151***<br>(0.028) | -0.08***<br>(0.026) | -0.064**<br>(0.027) | 0.107**<br>(0.052)              | 0.174***<br>(0.050)     | -0.018<br>(0.067)  | 0.059<br>(0.081) |
| Observations     | 19,306              | 16,817            | 16,725            | 19,306                 | 18,445               | 18,445              | 18,445              | 11,248                          | 11,248                  | 14,161             | 14,161           |
| # of respondents | 7,099               | 6,401             | 6,371             | 7,099                  | 6,757                | 6,757               | 6,757               | 6,257                           | 6,257                   | 5,280              | 5,280            |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the economic, social and Well-being impact of ERC on existing immigrants in Germany. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Our treated group consists of T-MENA immigrants and the control group is comprised of non-T-MENA immigrants in Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. The main explanatory variables are *Post*, a dummy variable indicating all periods after the 2015 German Open Border Policy, and *Treat × Post*, the interaction between treated group dummy and post-treatment dummy. Control variables include all the control variables used for specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 4.6: Treatment intensity checks**

|   | (1)                   | (2)                 | (3)                 | (4)                    | (5)                    | (6)                 | (7)                  | (8)                             | (9)                     | (10)                 | (11)                 |
|---|-----------------------|---------------------|---------------------|------------------------|------------------------|---------------------|----------------------|---------------------------------|-------------------------|----------------------|----------------------|
|   | Economic impact       |                     |                     |                        | Social impact          |                     |                      | Well-being effects              |                         |                      |                      |
|   | Unemployment status   | Log weekly hours    | Log hourly wages    | Self-employment status | Immigration            | Worries about Crime | Hostility            | Social assimilation Feel German | Connect to Home country | Life                 | Satisfactions Health |
| <b>Panel (A): Ratio of Middle-Eastern (ME) refugees over German nationals, 2013 and 2015</b>          |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |
| <i>ME refugees</i>  |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |
| <i>German population</i>  | -6.697<br>(7.233)     | -3.140<br>(15.384)  | 15.589<br>(16.718)  | -2.228<br>(3.983)      | 6.672<br>(30.500)      | 23.023<br>(28.781)  | 7.778<br>(27.793)    |                                 |                         | 21.993<br>(57.733)   | 43.988<br>(73.216)   |
| Treat ×   |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |
| <i>ME refugees</i>  |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |
| <i>German population</i>  | -21.650**<br>(10.583) | 26.304*<br>(14.341) | -16.398<br>(14.876) | 0.968<br>(5.254)       | -84.695**<br>(39.875)  | -53.990<br>(37.232) | -54.867<br>(39.813)  |                                 |                         | -8.876<br>(69.581)   | -129.70<br>(105.460) |
| Observations  | 8,742                 | 7,557               | 7,511               | 8,742                  | 5,714                  | 5,714               | 5,714                |                                 |                         | 5,062                | 5,062                |
| # of respondents  | 6,015                 | 5,289               | 5,260               | 6,015                  | 4,581                  | 4,581               | 4,581                |                                 |                         | 3,803                | 3,803                |
| <b>Panel (B): Ratio of Middle-Eastern (ME) refugees over German nationals, 2013 and 2016</b>          |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |
| <i>ME refugees</i>  |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |
| <i>German population</i>  | -4.496<br>(3.522)     | 2.343<br>(6.072)    | 2.742<br>(4.795)    | 1.047<br>(2.305)       | -5.442<br>(11.288)     | 1.526<br>(11.448)   | -9.048<br>(10.217)   | -5.420<br>(19.958)              | 15.413<br>(20.492)      | -35.362*<br>(19.279) | -42.304<br>(30.151)  |
| Treat ×   |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |
| <i>ME refugees</i>  |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |
| <i>German population</i>  | 0.584<br>(3.658)      | 1.312<br>(5.067)    | -3.617<br>(5.470)   | -3.546*<br>(1.966)     | -47.427***<br>(14.174) | -26.6**<br>(12.301) | -26.96**<br>(13.517) | 14.232<br>(15.597)              | 31.220*<br>(16.914)     | -4.944<br>(25.597)   | 24.207<br>(30.765)   |
| Observations  | 8,257                 | 7,178               | 7,145               | 8,257                  | 5,648                  | 5,648               | 5,648                | 6,887                           | 6,887                   | 4,989                | 4,989                |
| # of respondents  | 5,901                 | 5,200               | 5,181               | 5,901                  | 4,686                  | 4,686               | 4,686                | 5,501                           | 5,501                   | 3,877                | 3,877                |
| <b>Panel (C): Ratio of Middle-Eastern asylum seekers (ME AS) over German nationals, 2013 and 2015</b> |                       |                     |                     |                        |                        |                     |                      |                                 |                         |                      |                      |

| <i>ME AS</i>             |          |          |         |         |           |          |          |  |          |          |  |
|--------------------------|----------|----------|---------|---------|-----------|----------|----------|--|----------|----------|--|
| <i>German population</i> | 0.216    | -0.867   | 3.121   | -1.204  | -7.164    | 6.800    | 21.407   |  | 38.354   | -32.805  |  |
|                          | (3.368)  | (6.210)  | (7.096) | (2.471) | (16.011)  | (16.385) | (14.146) |  | (34.510) | (41.307) |  |
| Treat ×                  |          |          |         |         |           |          |          |  |          |          |  |
| <i>ME AS</i>             |          |          |         |         |           |          |          |  |          |          |  |
| <i>German population</i> | -11.338* | 15.657** | -8.830  | 0.094   | -50.912** | -40.2**  | -34.052  |  | 4.782    | -84.436  |  |
|                          | (5.859)  | (7.621)  | (8.174) | (3.001) | (23.235)  | (20.513) | (21.935) |  | (43.030) | (61.046) |  |
| Observations             | 8,742    | 7,557    | 7,511   | 8,742   | 5,714     | 5,714    | 5,714    |  | 5,062    | 5,062    |  |
| # of respondents         | 6,015    | 5,289    | 5,260   | 6,015   | 4,581     | 4,581    | 4,581    |  | 3,803    | 3,803    |  |

**Panel (D): Ratio of Middle-Eastern asylum seekers (ME AS) over German nationals, 2013 and 2016**

| <i>ME AS</i>             |         |         |         |         |            |          |          |          |          |          |          |
|--------------------------|---------|---------|---------|---------|------------|----------|----------|----------|----------|----------|----------|
| <i>German population</i> | -3.041  | 2.999   | 3.269   | -0.173  | -19.364*   | -2.685   | -7.152   | -25.292  | 23.784   | -45.9**  | -30.823  |
|                          | (3.007) | (4.834) | (4.105) | (1.786) | (11.384)   | (10.290) | (10.089) | (16.048) | (15.810) | (18.658) | (25.704) |
| Treat ×                  |         |         |         |         |            |          |          |          |          |          |          |
| <i>ME AS</i>             |         |         |         |         |            |          |          |          |          |          |          |
| <i>German population</i> | -0.057  | 0.929   | -1.175  | -2.168* | -25.068*** | -15.8**  | -14.427* | 11.470   | 17.103*  | -1.386   | 17.140   |
|                          | (2.039) | (3.011) | (3.022) | (1.208) | (7.728)    | (6.610)  | (7.477)  | (8.912)  | (8.901)  | (13.909) | (17.285) |
| Observations             | 8,257   | 7,178   | 7,145   | 8,257   | 5,648      | 5,648    | 5,648    | 6,887    | 6,887    | 4,989    | 4,989    |
| # of respondents         | 5,901   | 5,200   | 5,181   | 5,901   | 4,686      | 4,686    | 4,686    | 5,501    | 5,501    | 3,877    | 3,877    |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the economic, social and well-being impact of ERC on existing immigrants with a continuous measure of the treatment. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. In panel (A) and (B), we consider the ratio of the number of Middle-Eastern (ME) refugees over the total number of German nationals in that state. Panel (C) and (D) show the results when the ratio of the number of Middle-Eastern asylum seekers (ME AS) over the number of German nationals is considered as the treatment intensity measure. We restrict the sample to survey year 2013 and 2015 in panel (A) and (C) and in panel (B) and (D) the sample is restricted to survey year 2013 and 2016. Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## Supplementary appendix

Table 4.A.1: Lead and lag effects - Turks

|   | (1)                 | (2)              | (3)               | (4)                    | (5)                  | (6)                  | (7)                 | (8)                             | (9)                     | (10)               | (11)             |
|---|---------------------|------------------|-------------------|------------------------|----------------------|----------------------|---------------------|---------------------------------|-------------------------|--------------------|------------------|
|   | Economic impact     |                  |                   | Social impact          |                      |                      |                     | Well-being effects              |                         |                    |                  |
|   | Unemployment status | Log weekly hours | Log hourly wages  | Self-employment status | Immigration          | Worries about Crime  | Hostility           | Social assimilation Feel German | Connect to Home country | Satisfactions Life | Health           |
| <b>Treated = Turks, Control = non-T-MENA immigrants</b> |                     |                  |                   |                        |                      |                      |                     |                                 |                         |                    |                  |
| Treat × Year2014  | -0.013<br>(0.016)   | 0.005<br>(0.020) | 0.001<br>(0.023)  | -0.000<br>(0.009)      | -0.027<br>(0.055)    | -0.018<br>(0.052)    | -0.059<br>(0.055)   | -0.080<br>(0.066)               | 0.077<br>(0.063)        | -0.055<br>(0.118)  | 0.102<br>(0.144) |
| Treat × Year2015  | -0.035*<br>(0.020)  | 0.033<br>(0.025) | -0.026<br>(0.026) | -0.001<br>(0.011)      | -0.172***<br>(0.058) | -0.083<br>(0.053)    | -0.119**<br>(0.056) |                                 |                         | -0.040<br>(0.117)  | 0.017<br>(0.152) |
| Treat × Year2016  | -0.000<br>(0.021)   | 0.007<br>(0.027) | -0.009<br>(0.026) | -0.019<br>(0.012)      | -0.239***<br>(0.060) | -0.168***<br>(0.054) | -0.146**<br>(0.058) | 0.042<br>(0.078)                | 0.267***<br>(0.072)     | 0.007<br>(0.114)   | 0.194<br>(0.148) |
| Treat × Year2017  | -0.018<br>(0.022)   | 0.043<br>(0.029) | -0.030<br>(0.029) | -0.024*<br>(0.014)     | -0.219***<br>(0.061) | -0.096*<br>(0.057)   | -0.108*<br>(0.061)  |                                 |                         | -0.169<br>(0.118)  | 0.129<br>(0.160) |
| Observations  | 18,703              | 16,358           | 16,271            | 18,703                 | 17,857               | 17,857               | 17,857              | 10,866                          | 10,866                  | 13,803             | 13,803           |
| # of respondents  | 6,843               | 6,198            | 6,170             | 6,843                  | 6,515                | 6,515                | 6,515               | 6,024                           | 6,024                   | 5,131              | 5,131            |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the lead and lag effect of the ERC in Germany. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. The treated group is Turks and control group is non-T-MENA immigrants. Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 4.A.2: Lead and lag effects - extended pre-treatment periods**

|  | (1)                 | (2)               | (3)               | (4)                    | (5)                  | (6)                 | (7)                 | (8)                             | (9)                     | (10)               | (11)               |
|--|---------------------|-------------------|-------------------|------------------------|----------------------|---------------------|---------------------|---------------------------------|-------------------------|--------------------|--------------------|
|  | Economic impact     |                   |                   | Social impact          |                      |                     |                     | Well-being effects              |                         |                    |                    |
|  | Unemployment status | Log weekly hours  | Log hourly wages  | Self-employment status | Immigration          | Worries about Crime | Hostility           | Social assimilation Feel German | Connect to Home country | Satisfactions Life | Health             |
| <b>2011-2017: treated = T-MENA immigrants, control = non-T-MENA immigrants</b> |                     |                   |                   |                        |                      |                     |                     |                                 |                         |                    |                    |
| Treat × Year2011   | -0.027<br>(0.022)   | -0.033<br>(0.029) | -0.017<br>(0.029) | -0.003<br>(0.013)      | -0.058<br>(0.062)    | 0.017<br>(0.057)    | -0.016<br>(0.058)   |                                 |                         | 0.000<br>(0.110)   | 0.300**<br>(0.145) |
| Treat × Year2012   | -0.036*<br>(0.019)  | -0.041<br>(0.026) | -0.017<br>(0.026) | 0.003<br>(0.011)       | -0.051<br>(0.054)    | 0.052<br>(0.050)    | 0.028<br>(0.052)    | -0.049<br>(0.084)               | -0.071<br>(0.086)       | -0.081<br>(0.103)  | 0.092<br>(0.131)   |
| Treat × Year2014   | -0.000<br>(0.015)   | 0.005<br>(0.019)  | -0.004<br>(0.021) | 0.005<br>(0.008)       | -0.021<br>(0.053)    | 0.004<br>(0.049)    | -0.067<br>(0.051)   | -0.043<br>(0.063)               | 0.057<br>(0.061)        | -0.003<br>(0.109)  | 0.049<br>(0.136)   |
| Treat × Year2015   | -0.032*<br>(0.018)  | 0.020<br>(0.024)  | -0.023<br>(0.023) | 0.001<br>(0.009)       | -0.153***<br>(0.055) | -0.053<br>(0.050)   | -0.116**<br>(0.052) |                                 |                         | 0.007<br>(0.108)   | -0.080<br>(0.140)  |
| Treat × Year2016   | 0.007<br>(0.018)    | -0.013<br>(0.026) | -0.008<br>(0.025) | -0.018*<br>(0.011)     | -0.213***<br>(0.057) | -0.15***<br>(0.051) | -0.15***<br>(0.054) | 0.067<br>(0.071)                | 0.216***<br>(0.069)     | 0.055<br>(0.108)   | 0.060<br>(0.143)   |
| Treat × Year2017   | -0.005<br>(0.020)   | 0.028<br>(0.027)  | -0.028<br>(0.027) | -0.016<br>(0.012)      | -0.189***<br>(0.058) | -0.065<br>(0.053)   | -0.097*<br>(0.056)  |                                 |                         | -0.057<br>(0.108)  | 0.058<br>(0.151)   |
| Observations   | 24,165              | 21,067            | 20,959            | 24,165                 | 22,164               | 22,164              | 22,164              | 14,060                          | 14,060                  | 18,339             | 18,339             |
| # of respondents   | 7,970               | 7,192             | 7,163             | 7,970                  | 7,472                | 7,472               | 7,472               | 7,164                           | 7,164                   | 6,030              | 6,030              |

Source: SOEP v34 2011-2017, unbalanced panel, own calculations.

Notes: In this table, we show the lead and lag effect of the ERC in Germany. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 4.A.3: Political outcomes**

|                   | (1)                 | (2)                          | (3)                  | (4)                  |
|-------------------|---------------------|------------------------------|----------------------|----------------------|
|                   | <b>Support</b>      | <b>Support<br/>intensity</b> | <b>Right</b>         | <b>Right</b>         |
| Post              | -0.035**<br>(0.016) | -0.040<br>(0.077)            | 0.021**<br>(0.010)   |                      |
| Treat × Post      | -0.012<br>(0.015)   | -0.065<br>(0.059)            | -0.029***<br>(0.011) |                      |
| Treat × Year 2014 |                     |                              |                      | -0.017***<br>(0.006) |
| Treat × Year 2015 |                     |                              |                      | -0.018*<br>(0.009)   |
| Treat × Year 2016 |                     |                              |                      | -0.039***<br>(0.014) |
| Treat × Year 2017 |                     |                              |                      | -0.044***<br>(0.016) |
| Observations      | 22,386              | 5,790                        | 5,840                | 5,840                |
| # of respondents  | 7,915               | 2,942                        | 2,952                | 2,952                |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the treatment effect on political outcomes. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. In column (1) we generate a dummy variable Support as an outcome measure that is 1 if the respondent supports a political party and 0 otherwise. In column (2) as dependent variable we use the support intensity, ranging from 1 (very weak) to 5 (very strong). In column (3) and (4) generate the dummy variable Right for supporting right-wing party and it equals 1 if the respondent supports AfD, NPD, REP or DVU and 0 otherwise. Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 4.A.4: Stay in Germany outcomes**

|                  | (1)                        | (2)                                  |
|------------------|----------------------------|--------------------------------------|
|                  | <b>Stay in<br/>Germany</b> | <b>Log years<br/>desired to stay</b> |
| Post             | 0.026**<br>(0.011)         | -0.016<br>(0.026)                    |
| Treat × Post     | -0.006<br>(0.013)          | 0.086**<br>(0.041)                   |
| Observations     | 22,394                     | 2,394                                |
| # of respondents | 7,535                      | 1,121                                |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.  
Notes: In this table, we show the treatment effect on stay in Germany outcomes. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. In column (1) we generate a dummy variable, i.e. stay in Germany, as an outcome measure that is 1 if the respondent desires to stay in Germany permanently and 0 otherwise. In column (2) as dependent variable we use the years desired to stay in Germany, ranging from 1 to 50, in logarithm. Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



**Table 4.A.5: Effect heterogeneity**

|                             | (1)                 | (2)              | (3)              | (4)                    | (5)           | (6)     | (7)       | (8)                 | (9)                     | (10)          | (11)    |
|-----------------------------|---------------------|------------------|------------------|------------------------|---------------|---------|-----------|---------------------|-------------------------|---------------|---------|
|                             | Economic impact     |                  |                  | Social impact          |               |         |           |                     | Well-being effects      |               |         |
|                             | Unemployment status | Log weekly hours | Log hourly wages | Self-employment status | Worries about |         |           | Social assimilation |                         | Satisfactions |         |
|                             |                     |                  |                  |                        | Immigration   | Crime   | Hostility | Feel German         | Connect to Home country | Life          | Health  |
| <b>Panel (A): Gender</b>    |                     |                  |                  |                        |               |         |           |                     |                         |               |         |
| Treat×Post×Female           | -0.022              | 0.008            | -0.06*           | 0.003                  | 0.078         | 0.007   | -0.12**   | 0.109               | -0.192*                 | 0.110         | 0.126   |
|                             | (0.027)             | (0.035)          | (0.034)          | (0.016)                | (0.056)       | (0.053) | (0.054)   | (0.102)             | (0.098)                 | (0.134)       | (0.166) |
| Observations                | 19,306              | 16,817           | 16,725           | 19,306                 | 18,445        | 18,445  | 18,445    | 11,248              | 11,248                  | 14,161        | 14,161  |
| # of respondents            | 7,099               | 6,401            | 6,371            | 7,099                  | 6,757         | 6,757   | 6,757     | 6,257               | 6,257                   | 5,280         | 5,280   |
| <b>Panel (B): Education</b> |                     |                  |                  |                        |               |         |           |                     |                         |               |         |
| Treat×Post×HighEdu          | -0.039              | 0.076**          | 0.017            | 0.011                  | -0.108        | -0.037  | 0.064     | 0.089               | -0.062                  | -0.022        | 0.090   |
|                             | (0.026)             | (0.038)          | (0.039)          | (0.019)                | (0.066)       | (0.062) | (0.065)   | (0.111)             | (0.107)                 | (0.159)       | (0.187) |
| Observations                | 19,306              | 16,817           | 16,725           | 19,306                 | 18,445        | 18,445  | 18,445    | 11,248              | 11,248                  | 14,161        | 14,161  |
| # of respondents            | 7,099               | 6,401            | 6,371            | 7,099                  | 6,757         | 6,757   | 6,757     | 6,257               | 6,257                   | 5,280         | 5,280   |
| <b>Panel (C): Age</b>       |                     |                  |                  |                        |               |         |           |                     |                         |               |         |
| Treat×Post×Young            | -0.005              | 0.034            | 0.011            | -0.003                 | 0.050         | 0.029   | 0.055     | 0.063               | 0.266**                 | 0.061         | 0.006   |
|                             | (0.030)             | (0.038)          | (0.038)          | (0.016)                | (0.061)       | (0.056) | (0.059)   | (0.112)             | (0.110)                 | (0.147)       | (0.178) |
| Observations                | 19,306              | 16,817           | 16,725           | 19,306                 | 18,445        | 18,445  | 18,445    | 11,248              | 11,248                  | 14,161        | 14,161  |
| # of respondents            | 7,099               | 6,401            | 6,371            | 7,099                  | 6,757         | 6,757   | 6,757     | 6,257               | 6,257                   | 5,280         | 5,280   |

| <b>Panel (D): Language skills</b>             |         |         |         |         |           |         |         |         |         |         |         |
|---|---------|---------|---------|---------|-----------|---------|---------|---------|---------|---------|---------|
| Treat×Post×GoodLang                           | -0.062* | -0.083* | 0.077*  | -0.014  | -0.219*** | -0.071  | -0.077  | -0.247* | 0.076   | 0.104   | -0.167  |
|   | (0.036) | (0.049) | (0.042) | (0.017) | (0.068)   | (0.067) | (0.064) | (0.132) | (0.132) | (0.159) | (0.235) |
| Observations                                  | 19,306  | 16,817  | 16,725  | 19,306  | 18,445    | 18,445  | 18,445  | 11,248  | 11,248  | 14,161  | 14,161  |
| # of respondents                              | 7,099   | 6,401   | 6,371   | 7,099   | 6,757     | 6,757   | 6,757   | 6,257   | 6,257   | 5,280   | 5,280   |
| <b>Panel (E): First-generation immigrants</b> |         |         |         |         |           |         |         |         |         |         |         |
| Treat×Post×FGI                                | 0.053*  | -0.039  | -0.032  | -0.004  | 0.031     | -0.012  | -0.024  | 0.069   | -0.021  | 0.268** | -0.079  |
|   | (0.027) | (0.035) | (0.036) | (0.017) | (0.058)   | (0.055) | (0.056) | (0.107) | (0.109) | (0.136) | (0.163) |
| Observations                                  | 19,306  | 16,817  | 16,725  | 19,306  | 18,445    | 18,445  | 18,445  | 11,248  | 11,248  | 14,161  | 14,161  |
| # of respondents                              | 7,099   | 6,401   | 6,371   | 7,099   | 6,757     | 6,757   | 6,757   | 6,257   | 6,257   | 5,280   | 5,280   |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the heterogeneous treatment effect by gender, education, age and language proficiency. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. In panel (A) we study whether treatment effect differs between males and females. In panel (B) we define that one person has high education if his or her years of schooling longer than 12 and investigate whether treatment effect is different between high and low educated respondents. In panel (C) individuals of age 35 or younger are define to be young and we check whether treatment effect differs between young and old respondents. In panel (D) we study whether the treatment effect is different between individuals with good or bad language skills. In panel (E) we investigate whether the treatment effect differs between first- and second-generation immigrants. Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 4.A.6: Pseudo-treated groups**

|   | (1)                 | (2)                | (3)               | (4)                    | (5)                  | (6)                 | (7)                  | (8)                | (9)               |
|---|---------------------|--------------------|-------------------|------------------------|----------------------|---------------------|----------------------|--------------------|-------------------|
|   | Economic impact     |                    |                   |                        | Social impact        |                     |                      | Well-being effects |                   |
|   | Unemployment status | Log weekly hours   | Log hourly wages  | Self-employment status | Immigration          | Crime               | Hostility            | Life Satisfaction  | Health            |
| <b>Panel (A): Treated = T-MENA immigrants (N = 991), control = natives (N = 11055)</b>      |                     |                    |                   |                        |                      |                     |                      |                    |                   |
| Treat × Year2014  | -0.005<br>(0.015)   | 0.021<br>(0.018)   | -0.015<br>(0.021) | -0.004<br>(0.008)      | 0.023<br>(0.051)     | -0.005<br>(0.047)   | 0.015<br>(0.049)     | 0.025<br>(0.106)   | 0.037<br>(0.130)  |
| Treat × Year2015  | -0.029<br>(0.018)   | 0.053**<br>(0.024) | -0.016<br>(0.023) | -0.006<br>(0.009)      | -0.105**<br>(0.053)  | -0.080*<br>(0.047)  | -0.133***<br>(0.050) | -0.029<br>(0.104)  | -0.095<br>(0.135) |
| Treat × Year2016  | 0.007<br>(0.019)    | 0.024<br>(0.026)   | -0.013<br>(0.025) | -0.020**<br>(0.010)    | -0.163***<br>(0.055) | -0.14***<br>(0.049) | -0.128**<br>(0.052)  | -0.028<br>(0.105)  | 0.024<br>(0.136)  |
| Treat × Year2017  | -0.006<br>(0.020)   | 0.059**<br>(0.027) | -0.031<br>(0.027) | -0.012<br>(0.012)      | -0.096*<br>(0.056)   | -0.051<br>(0.052)   | -0.041<br>(0.054)    | -0.059<br>(0.105)  | 0.003<br>(0.143)  |
| Observations  | 45,589              | 42,174             | 42,006            | 45,589                 | 49,406               | 49,406              | 49,406               | 40,848             | 40,848            |
| # of respondents  | 14,823              | 14,002             | 13,959            | 14,823                 | 16,042               | 16,042              | 16,042               | 12,333             | 12,333            |
| <b>Panel (B): treated = non-T-MENA immigrants (N = 4925), control = natives (N = 11055)</b> |                     |                    |                   |                        |                      |                     |                      |                    |                   |
| Treat × Year2014  | 0.001<br>(0.006)    | 0.007<br>(0.008)   | -0.012<br>(0.009) | -0.008**<br>(0.003)    | 0.053**<br>(0.021)   | -0.006<br>(0.020)   | 0.053**<br>(0.021)   | 0.090**<br>(0.041) | 0.008<br>(0.052)  |
| Treat × Year2015  | 0.009<br>(0.006)    | 0.019**<br>(0.009) | 0.010<br>(0.010)  | -0.008**<br>(0.004)    | 0.058***<br>(0.022)  | -0.025<br>(0.021)   | -0.049**<br>(0.022)  | 0.032<br>(0.043)   | 0.002<br>(0.054)  |
| Treat × Year2016  | 0.007<br>(0.007)    | 0.021**<br>(0.010) | -0.003<br>(0.010) | -0.004<br>(0.004)      | 0.059**<br>(0.024)   | 0.003<br>(0.022)    | -0.019<br>(0.023)    | -0.008<br>(0.046)  | -0.062<br>(0.058) |
| Treat × Year2017  | 0.007<br>(0.008)    | 0.015<br>(0.012)   | 0.005<br>(0.012)  | -0.000<br>(0.005)      | 0.104***<br>(0.025)  | 0.012<br>(0.023)    | 0.014<br>(0.024)     | 0.079*<br>(0.047)  | -0.063<br>(0.064) |
| Observations  | 58,777              | 53,991             | 53,779            | 58,777                 | 61,755               | 61,755              | 61,755               | 50,895             | 50,895            |
| # of respondents  | 19,532              | 18,367             | 18,318            | 19,532                 | 20,523               | 20,523              | 20,523               | 16,013             | 16,013            |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the economic, social and well-being impact of ERC in Germany on different experimental groups: i.e. T-MENA immigrants in treated group and natives in control group (panel A) and non-T-MENA immigrants in treated group and natives in control group (panel B). Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 4.A. 7: Lead and lag effects with Alternative treatment definition I**  
**(Post-treatment obs.: T-MENA==103, non-T-MENA==601)**

|                                   | (1)                      | (3)<br>Economic impact |                       | (4)                           | (5)                   | (7)<br>Social impact   |                      | (8)                                   | (9)                           | (10)<br>Satisfaction      |                             |
|-----------------------------------|--------------------------|------------------------|-----------------------|-------------------------------|-----------------------|------------------------|----------------------|---------------------------------------|-------------------------------|---------------------------|-----------------------------|
|                                   | Unemploy-<br>ment status | Log hours<br>worked    | Log hourly<br>wage    | Self-<br>employment<br>status | Immigration           | Worries about<br>Crime | Hostility            | Social assimilation<br>Feel<br>German | Connect<br>to home<br>country | Life<br>satisfacti-<br>on | Health<br>satisfacti-<br>on |
| Treat*Year2014                    | -0.00667<br>(0.0154)     | 0.0128<br>(0.0187)     | -0.000867<br>(0.0215) | 0.00258<br>(0.00808)          | -0.0359<br>(0.0543)   | -0.00160<br>(0.0503)   | -0.0506<br>(0.0526)  | -0.0459<br>(0.0627)                   | 0.0568<br>(0.0610)            | 0.00678<br>(0.0941)       | 0.113<br>(0.102)            |
| <b>Treat*Before_OBP_2<br/>015</b> | -0.0349*<br>(0.0186)     | 0.0286<br>(0.0252)     | -0.0146<br>(0.0242)   | 0.00315<br>(0.00998)          | -0.145**<br>(0.0564)  | -0.0572<br>(0.0513)    | -0.0686<br>(0.0536)  |                                       |                               | 0.00444<br>(0.0985)       | 0.00980<br>(0.118)          |
| <b>Treat*After_OBP_20<br/>15</b>  | -0.0566<br>(0.0419)      | 0.0254<br>(0.0450)     | -0.0680<br>(0.0592)   | -0.0265<br>(0.0177)           | -0.361***<br>(0.115)  | -0.0402<br>(0.101)     | -0.334***<br>(0.107) |                                       |                               | 0.0387<br>(0.244)         | -0.221<br>(0.224)           |
| Treat*Year2016                    | 0.00117<br>(0.0188)      | -0.00575<br>(0.0256)   | -0.00519<br>(0.0253)  | -0.0185*<br>(0.0105)          | -0.234***<br>(0.0589) | -0.149***<br>(0.0523)  | -0.131**<br>(0.0557) | 0.0744<br>(0.0718)                    | 0.215***<br>(0.0697)          | 0.0630<br>(0.0987)        | 0.143<br>(0.118)            |
| Treat*Year2017                    | -0.0123<br>(0.0202)      | 0.0329<br>(0.0267)     | -0.0284<br>(0.0272)   | -0.0164<br>(0.0123)           | -0.209***<br>(0.0591) | -0.0634<br>(0.0546)    | -0.0764<br>(0.0570)  |                                       |                               | -0.0717<br>(0.105)        | 0.116<br>(0.122)            |
| Observations                      | 19,306                   | 16,817                 | 16,725                | 19,306                        | 18,445                | 18,445                 | 18,445               | 11,248                                | 11,248                        | 16,480                    | 16,480                      |
| # of respondents                  | 7,099                    | 6,401                  | 6,371                 | 7,099                         | 6,757                 | 6,757                  | 6,757                | 6,257                                 | 6,257                         | 5,991                     | 5,991                       |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: This table shows the lead and lag effect of the ERC in Germany. Our treated group consists of T-MENA immigrants, and the control group is comprised of non-T-MENA immigrants in Germany. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations, which includes respondents active as well as inactive in the labor market. The explanatory variables shown here are the interaction terms, including the treatment indicator Treat and survey year indicators. In each specification, we control for the respondent's age (in level, quadratic and cubic terms), rural area, marital status, education (in level and quadratic term), working experience (in level and quadratic term), language skill (oral and written German), household head, house ownership, disabled, and stay in Germany. Additionally, we control for the state and year fixed effects. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

**Table 4.A. 8: Lead and lag effects with Alternative treatment definition II  
(Post-treatment obs.: TMENA==220, non-TMENA==1298)**

|                                 | (1)                      | (2)                  | (3)                   | (4)                           | (5)                   | (6)                    | (7)                   | (8)                 | (9)                           | (10)                      | (11)                        |
|---------------------------------|--------------------------|----------------------|-----------------------|-------------------------------|-----------------------|------------------------|-----------------------|---------------------|-------------------------------|---------------------------|-----------------------------|
|                                 | Economic impact          |                      |                       | Social impact                 |                       |                        |                       | Social assimilation |                               | Satisfaction              |                             |
|                                 | Unemploy-<br>ment status | Log hours<br>worked  | Log hourly<br>wage    | Self-<br>employment<br>status | Immigration           | Worries about<br>Crime | Hostility             | Feel<br>German      | Connect<br>to home<br>country | Life<br>satisfacti-<br>on | Health<br>satisfacti-<br>on |
| Treat*Year2014                  | -0.00673<br>(0.0154)     | 0.0126<br>(0.0187)   | -0.000976<br>(0.0215) | 0.00250<br>(0.00808)          | -0.0397<br>(0.0545)   | -0.00949<br>(0.0503)   | -0.0510<br>(0.0526)   | -0.0459<br>(0.0627) | 0.0568<br>(0.0610)            | -0.0695<br>(0.111)        | 0.0474<br>(0.137)           |
| <b>Treat*Before_Inflow_2015</b> | -0.0210<br>(0.0196)      | 0.00854<br>(0.0257)  | 0.00106<br>(0.0261)   | 0.00555<br>(0.0108)           | -0.125**<br>(0.0575)  | -0.0226<br>(0.0525)    | -0.0596<br>(0.0550)   |                     |                               | -0.141<br>(0.115)         | -0.139<br>(0.155)           |
| <b>Treat*Before_Inflow_2015</b> | -0.0722***<br>(0.0277)   | 0.0663*<br>(0.0348)  | -0.0679*<br>(0.0351)  | -0.0146<br>(0.0130)           | -0.293***<br>(0.0769) | -0.157**<br>(0.0696)   | -0.200***<br>(0.0730) |                     |                               | 0.111<br>(0.167)          | 0.0665<br>(0.178)           |
| Treat*Year2016                  | 0.000817<br>(0.0188)     | -0.00568<br>(0.0256) | -0.00522<br>(0.0253)  | -0.0185*<br>(0.0105)          | -0.238***<br>(0.0591) | -0.157***<br>(0.0524)  | -0.132**<br>(0.0557)  | 0.0744<br>(0.0718)  | 0.215***<br>(0.0697)          | -0.0239<br>(0.110)        | 0.101<br>(0.142)            |
| Treat*Year2017                  | -0.0127<br>(0.0202)      | 0.0330<br>(0.0267)   | -0.0285<br>(0.0271)   | -0.0165<br>(0.0124)           | -0.212***<br>(0.0593) | -0.0705<br>(0.0547)    | -0.0777<br>(0.0571)   |                     |                               | -0.139<br>(0.111)         | 0.0645<br>(0.150)           |
| Observations                    | 19,306                   | 16,817               | 16,725                | 19,306                        | 18,445                | 18,445                 | 18,445                | 11,248              | 11,248                        | 14,161                    | 14,161                      |
| # of respondents                | 7,099                    | 6,401                | 6,371                 | 7,099                         | 6,757                 | 6,757                  | 6,757                 | 6,257               | 6,257                         | 5,280                     | 5,280                       |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: This table shows the lead and lag effect of the ERC in Germany. Our treated group consists of T-MENA immigrants, and the control group is comprised of non-T-MENA immigrants in Germany. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations, which includes respondents active as well as inactive in the labor market. The explanatory variables shown here are the interaction terms, including the treatment indicator Treat and survey year indicators. In each specification, we control for the respondent's age (in level, quadratic and cubic terms), rural area, marital status, education (in level and quadratic term), working experience (in level and quadratic term), language skill (oral and written German), household head, house ownership, disabled, and stay in Germany. Additionally, we control for the state and year fixed effects. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

**Table 4.A. 9: Lead and lag effects (all covariates)**

|                       | (1)                | (2)                    | (3)                    | (4)                           | (5)                | (6)                    | (7)                 | (8)                                   | (9)                           | (10)                  | (11)              |
|-----------------------|--------------------|------------------------|------------------------|-------------------------------|--------------------|------------------------|---------------------|---------------------------------------|-------------------------------|-----------------------|-------------------|
|                       | Economic impact    |                        |                        | Social impact                 |                    |                        |                     | Well-being effects                    |                               |                       |                   |
|                       | Unempl.<br>status  | Log<br>weekly<br>hours | Log<br>hourly<br>wages | Self-<br>employment<br>status | Immigration        | Worries about<br>Crime | Hostility           | Social assimilation<br>Feel<br>German | Connect<br>to Home<br>country | Satisfactions<br>Life | Health            |
| Age                   | 0.009<br>(0.026)   | -0.038<br>(0.040)      | 0.328***<br>(0.044)    | 0.004<br>(0.011)              | 0.066<br>(0.057)   | -0.016<br>(0.054)      | 0.112**<br>(0.056)  | 0.045<br>(0.099)                      | -0.078<br>(0.112)             | 0.016<br>(0.135)      | 0.203<br>(0.166)  |
| Age squared           | -0.001<br>(0.001)  | 0.001<br>(0.001)       | -0.006***<br>(0.001)   | 0.000<br>(0.000)              | 0.002<br>(0.001)   | 0.002<br>(0.001)       | -0.000<br>(0.001)   | -0.000<br>(0.003)                     | 0.001<br>(0.003)              | -0.001<br>(0.003)     | -0.007<br>(0.004) |
| Age cube              | 0.000<br>(0.000)   | -0.000<br>(0.000)      | 0.000***<br>(0.000)    | -0.000<br>(0.000)             | -0.000<br>(0.000)  | -0.000<br>(0.000)      | 0.000<br>(0.000)    | 0.000<br>(0.000)                      | -0.000<br>(0.000)             | 0.000<br>(0.000)      | 0.000<br>(0.000)  |
| Urban                 | -0.012<br>(0.047)  | 0.044<br>(0.066)       | -0.006<br>(0.055)      | 0.006<br>(0.008)              | 0.011<br>(0.091)   | -0.066<br>(0.087)      | -0.023<br>(0.083)   | -0.094<br>(0.172)                     | -0.004<br>(0.181)             | -0.310<br>(0.189)     | 0.160<br>(0.235)  |
| Married               | 0.051**<br>(0.020) | -0.047*<br>(0.024)     | -0.018<br>(0.031)      | 0.008<br>(0.013)              | 0.030<br>(0.048)   | 0.062<br>(0.046)       | -0.014<br>(0.046)   | 0.075<br>(0.089)                      | 0.098<br>(0.108)              | 0.006<br>(0.109)      | 0.089<br>(0.127)  |
| Education             | 0.056<br>(0.056)   | -0.162<br>(0.107)      | 0.972***<br>(0.114)    | 0.032<br>(0.025)              | -0.197<br>(0.131)  | -0.062<br>(0.109)      | -0.208**<br>(0.105) | 0.088<br>(0.205)                      | -0.320<br>(0.236)             | 0.218<br>(0.287)      | 0.099<br>(0.288)  |
| Education squared     | -0.002<br>(0.002)  | 0.009**<br>(0.004)     | -0.032***<br>(0.004)   | -0.001<br>(0.001)             | 0.007<br>(0.005)   | 0.002<br>(0.004)       | 0.008**<br>(0.004)  | -0.005<br>(0.007)                     | 0.012<br>(0.008)              | -0.007<br>(0.010)     | -0.003<br>(0.010) |
| Work Experience       | 0.003<br>(0.007)   | 0.060***<br>(0.011)    | -0.016<br>(0.012)      | -0.003<br>(0.004)             | -0.028*<br>(0.015) | -0.001<br>(0.014)      | 0.020<br>(0.015)    | 0.076***<br>(0.028)                   | 0.014<br>(0.029)              | 0.016<br>(0.042)      | -0.044<br>(0.052) |
| Work. Exp. Squared    | 0.000<br>(0.000)   | -0.001***<br>(0.000)   | -0.000<br>(0.000)      | 0.000<br>(0.000)              | 0.001<br>(0.000)   | 0.000<br>(0.000)       | -0.000<br>(0.000)   | -0.001<br>(0.001)                     | -0.000<br>(0.001)             | 0.000<br>(0.001)      | 0.000<br>(0.001)  |
| German prof.: Oral    | 0.003<br>(0.012)   | -0.021<br>(0.019)      | -0.007<br>(0.016)      | 0.006<br>(0.007)              | -0.030<br>(0.030)  | -0.028<br>(0.029)      | 0.005<br>(0.030)    | 0.216***<br>(0.074)                   | 0.016<br>(0.070)              | 0.037<br>(0.075)      | 0.065<br>(0.088)  |
| German prof.: Written | 0.001<br>(0.011)   | -0.000<br>(0.016)      | 0.000<br>(0.015)       | -0.000<br>(0.006)             | -0.016<br>(0.028)  | 0.006<br>(0.027)       | 0.005<br>(0.027)    | -0.015<br>(0.065)                     | -0.015<br>(0.065)             | 0.060<br>(0.067)      | 0.031<br>(0.073)  |

|                               |           |         |          |         |         |         |         |         |         |         |          |
|-------------------------------|-----------|---------|----------|---------|---------|---------|---------|---------|---------|---------|----------|
| HH relationship: head         | 0.003     | 0.008   | 0.048*   | -0.005  | -0.075* | -0.029  | -0.011  | -0.031  | -0.011  | -0.010  | 0.055    |
|                               | (0.020)   | (0.031) | (0.029)  | (0.009) | (0.043) | (0.038) | (0.040) | (0.062) | (0.075) | (0.118) | (0.133)  |
| Owens the house               | 0.003     | -0.008  | -0.001   | 0.008   | 0.044   | 0.018   | 0.006   | -0.040  | 0.055   | 0.137** | -0.020   |
|                               | (0.010)   | (0.015) | (0.015)  | (0.005) | (0.033) | (0.032) | (0.031) | (0.062) | (0.056) | (0.066) | (0.091)  |
| Divorced                      | 0.068**   | -0.010  | -0.020   | 0.021   | -0.061  | 0.087   | -0.071  | 0.113   | 0.102   | -0.125  | 0.096    |
|                               | (0.029)   | (0.033) | (0.035)  | (0.015) | (0.066) | (0.058) | (0.058) | (0.119) | (0.145) | (0.171) | (0.175)  |
| Disabled                      | -0.071*** | 0.043   | 0.068*   | -0.004  | -0.020  | -0.016  | -0.054  | 0.002   | 0.193*  | 0.274   | 0.541*** |
|                               | (0.024)   | (0.041) | (0.039)  | (0.006) | (0.047) | (0.045) | (0.044) | (0.103) | (0.100) | (0.184) | (0.203)  |
| Years since migration: Medium | -0.039**  | 0.007   | 0.006    | -0.005  | 0.027   | 0.074   | -0.008  | 0.173** | -0.060  | 0.082   | 0.121    |
|                               | (0.018)   | (0.025) | (0.026)  | (0.007) | (0.048) | (0.045) | (0.045) | (0.082) | (0.079) | (0.112) | (0.129)  |
| Years since migration: Longer | -0.031    | -0.013  | 0.002    | -0.000  | 0.017   | 0.067   | -0.053  | 0.204** | -0.091  | 0.149   | 0.223    |
|                               | (0.023)   | (0.033) | (0.032)  | (0.011) | (0.061) | (0.057) | (0.059) | (0.104) | (0.106) | (0.135) | (0.167)  |
| Hamburg                       | 0.154     | 0.015   | 0.208*** | -0.077  | -0.237  | 0.128   | 0.132   | 0.464** | -0.335  | 0.605   | -0.004   |
|                               | (0.140)   | (0.057) | (0.063)  | (0.069) | (0.366) | (0.206) | (0.330) | (0.206) | (0.237) | (0.822) | (0.288)  |
| Niedersachsen                 | 0.149     | -0.040  | 0.193    | -0.067  | -0.347  | 0.073   | 0.079   | -0.148  | 0.131   | 0.519   | 0.100    |
|                               | (0.117)   | (0.136) | (0.121)  | (0.056) | (0.307) | (0.265) | (0.388) | (0.418) | (0.426) | (0.996) | (0.521)  |
| Bremen                        | 0.253*    | 0.088   | 0.215    | -0.067  | -0.375  | 0.047   | -0.010  | 0.871*  | 0.346   | -0.447  | 0.169    |
|                               | (0.148)   | (0.196) | (0.158)  | (0.055) | (0.327) | (0.312) | (0.399) | (0.478) | (0.908) | (1.247) | (0.704)  |
| Nordrhein-Westfalen           | 0.251*    | -0.032  | 0.119    | -0.059  | -0.284  | 0.135   | 0.213   | 0.583   | 0.007   | 0.682   | 0.245    |
|                               | (0.129)   | (0.126) | (0.113)  | (0.056) | (0.319) | (0.255) | (0.368) | (0.517) | (0.695) | (1.121) | (0.957)  |
| Hessen                        | 0.188     | 0.120   | 0.103    | -0.095  | -0.631* | -0.209  | -0.021  | 0.063   | 0.367   | 1.335   | -0.865   |
|                               | (0.141)   | (0.188) | (0.228)  | (0.065) | (0.365) | (0.258) | (0.393) | (0.672) | (0.743) | (1.186) | (1.111)  |
| Rheinland-Pfalz               | 0.180     | 0.145   | 0.068    | -0.081  | -0.439  | 0.081   | -0.032  | -0.114  | 0.440   | 1.302   | -0.272   |
|                               | (0.141)   | (0.231) | (0.279)  | (0.063) | (0.357) | (0.270) | (0.387) | (0.673) | (0.782) | (1.182) | (1.038)  |
| Baden-Wuerttemberg            | 0.188     | 0.138   | 0.164    | 0.008   | -0.496  | 0.018   | -0.057  | -0.380  | 0.544   | 0.508   | -0.562   |
|                               | (0.158)   | (0.202) | (0.220)  | (0.065) | (0.338) | (0.250) | (0.376) | (0.605) | (0.801) | (1.164) | (1.081)  |
| Bayern                        | 0.068     | 0.407** | 0.102    | -0.025  | -0.379  | -0.178  | -0.266  | -0.470  | 0.480   | 0.544   | -0.282   |
|                               | (0.139)   | (0.187) | (0.201)  | (0.058) | (0.355) | (0.226) | (0.383) | (0.608) | (0.807) | (1.189) | (1.298)  |



|                  |                     |                   |                   |                     |                      |                      |                     |                   |                     |                   |                    |
|------------------|---------------------|-------------------|-------------------|---------------------|----------------------|----------------------|---------------------|-------------------|---------------------|-------------------|--------------------|
| Saarland         | 0.453**<br>(0.194)  | -0.027<br>(0.250) | 0.028<br>(0.298)  | -0.270*<br>(0.150)  | -0.213<br>(0.453)    | -0.040<br>(0.364)    | 0.195<br>(0.544)    | -0.186<br>(0.777) | 0.306<br>(0.833)    | 0.970<br>(1.339)  | -1.937*<br>(1.080) |
| Berlin           | 0.516**<br>(0.254)  | 0.231<br>(0.395)  | -0.199<br>(0.513) | 0.216<br>(0.241)    | -0.206<br>(0.365)    | 0.089<br>(0.303)     | -0.044<br>(0.381)   | -0.753<br>(0.851) | 0.633<br>(0.631)    | 1.384<br>(1.756)  | 0.882<br>(1.165)   |
| Year 2014        | 0.003<br>(0.005)    | 0.002<br>(0.008)  | -0.010<br>(0.008) | -0.005*<br>(0.003)  | 0.053***<br>(0.016)  | -0.026*<br>(0.015)   | 0.006<br>(0.016)    | 0.027<br>(0.021)  | -0.026<br>(0.022)   | -0.039<br>(0.033) | 0.017<br>(0.040)   |
| Year 2015        | 0.009*<br>(0.005)   | 0.007<br>(0.007)  | 0.002<br>(0.007)  | -0.006**<br>(0.003) | 0.072***<br>(0.014)  | -0.034**<br>(0.013)  | 0.025*<br>(0.014)   |                   |                     | 0.049*<br>(0.029) | 0.086**<br>(0.037) |
| Year 2016        | 0.006<br>(0.005)    | 0.011<br>(0.007)  | -0.011<br>(0.007) | -0.002<br>(0.003)   | 0.193***<br>(0.013)  | 0.104***<br>(0.012)  | 0.160***<br>(0.013) |                   |                     | 0.016<br>(0.029)  | 0.025<br>(0.036)   |
| Treat*Year2014   | -0.038**<br>(0.018) | 0.028<br>(0.024)  | -0.022<br>(0.024) | -0.001<br>(0.010)   | -0.164***<br>(0.056) | -0.055<br>(0.051)    | -0.092*<br>(0.053)  |                   |                     | -0.066<br>(0.109) | -0.078<br>(0.140)  |
| Treat*Year2015   | 0.001<br>(0.019)    | -0.006<br>(0.026) | -0.005<br>(0.025) | -0.018*<br>(0.011)  | -0.226***<br>(0.059) | -0.149***<br>(0.052) | -0.123**<br>(0.056) | 0.074<br>(0.072)  | 0.215***<br>(0.070) | -0.028<br>(0.110) | 0.097<br>(0.142)   |
| Treat*Year2016   | -0.012<br>(0.020)   | 0.033<br>(0.027)  | -0.029<br>(0.027) | -0.016<br>(0.012)   | -0.202***<br>(0.059) | -0.063<br>(0.055)    | -0.070<br>(0.057)   |                   |                     | -0.144<br>(0.111) | 0.059<br>(0.150)   |
| Treat*Year2017   | 19,306<br>7,099     | 16,817<br>6,401   | 16,725<br>6,371   | 19,306<br>7,099     | 18,445<br>6,757      | 18,445<br>6,757      | 18,445<br>6,757     | 11,248<br>6,257   | 11,248<br>6,257     | 14,161<br>5,280   | 14,161<br>5,280    |
| Observations     | 19,306              | 16,817            | 16,725            | 19,306              | 18,445               | 18,445               | 18,445              | 11,248            | 11,248              | 14,161            | 14,161             |
| # of respondents | 7,099               | 6,401             | 6,371             | 7,099               | 6,757                | 6,757                | 6,757               | 6,257             | 6,257               | 5,280             | 5,280              |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the lead and lag effect of the ERC in Germany. Our treated group consists of T-MENA immigrants and the control group is comprised of non-T-MENA immigrants in Germany. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. We analyze the economic impact of ERC, using as dependent variables unemployment status (column 1), a logarithm of weekly working hours (column 2), a logarithm of hourly wages (column 3) and self-employment status (column 4). The social outcomes include social worries about immigration (column 5), about crime development (column 6) and about xenophobic hostility (column 7). In columns 8 and 9, we consider the respondent's self-identification as German ("feel German") and connection to home country. The impact of ERC on their Well-being outcomes is investigated with outcome measures of life satisfaction (column 10) and health satisfaction (column 11). The explanatory variables shown here are the interaction terms including the treatment indicator Treat and survey year indicators. In each specification, we control for the respondent's age (in level, quadratic and cubic terms), rural area, marital status, education (in level and quadratic term), working experience (in level and quadratic term), language skill (oral and written German), household head, house ownership, disabled, and stay in Germany. Additionally, we control for the state and year fixed effects. Robust standard errors (clustered at individual level) in parentheses: \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

**Table 4.A.10: Restricted baseline sample to compare estimates of Treatment intensity checks**

|  | (1)                 | (2)              | (3)              | (4)                    | (5)           | (6)     | (7)       | (8)                 | (9)                     | (10)          | (11)    |
|--|---------------------|------------------|------------------|------------------------|---------------|---------|-----------|---------------------|-------------------------|---------------|---------|
|  | Economic impact     |                  |                  | Social impact          |               |         |           | Well-being effects  |                         |               |         |
|  | Unemployment status | Log weekly hours | Log hourly wages | Self-employment status | Worries about |         | Hostility | Social assimilation |                         | Satisfactions |         |
|  |                     |                  |                  |                        | Immigration   | Crime   |           | Feel German         | Connect to Home country | Life          | Health  |
| <b>Panel (A): Sample for years 2013 and 2015</b> |                     |                  |                  |                        |               |         |           |                     |                         |               |         |
| Treat*Year2015                                   | -0.043**            | 0.046*           | -0.029           | 0.002                  | -0.145**      | -0.091  | -0.098    |                     |                         | -0.028        | -0.188  |
|  | (0.020)             | (0.026)          | (0.025)          | (0.011)                | (0.068)       | (0.060) | (0.063)   |                     |                         | (0.125)       | (0.169) |
| Observations                                     | 8,742               | 7,557            | 7,511            | 8,742                  | 5,714         | 5,714   | 5,714     |                     |                         | 5,062         | 5,062   |
| # of respondents                                 | 6,015               | 5,289            | 5,260            | 6,015                  | 4,581         | 4,581   | 4,581     |                     |                         | 3,803         | 3,803   |
| <b>Panel (B): Sample for years 2013 and 2016</b> |                     |                  |                  |                        |               |         |           |                     |                         |               |         |
| Treat*Year2016                                   | -0.005              | 0.014            | -0.005           | -0.021*                | -0.254***     | -0.14** | -0.166**  | 0.086               | 0.215**                 | -0.064        | 0.165   |
|  | (0.020)             | (0.029)          | (0.029)          | (0.012)                | (0.077)       | (0.066) | (0.074)   | (0.088)             | (0.086)                 | (0.136)       | (0.171) |
| Observations                                     | 8,257               | 7,178            | 7,145            | 8,257                  | 5,648         | 5,648   | 5,648     | 6,887               | 6,887                   | 4,989         | 4,989   |
| # of respondents                                 | 5,901               | 5,200            | 5,181            | 5,901                  | 4,686         | 4,686   | 4,686     | 5,501               | 5,501                   | 3,877         | 3,877   |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

Notes: In this table, we show the economic, social and well-being impact of ERC on existing immigrants for a subsample that allows us to compare our baseline estimates with treatment intensity checks performed in Table 4.6. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. In panel (A) and (B), we consider the ratio of the number of Middle-Eastern (ME) refugees over the total number of German nationals in that state. Panel (C) and (D) show the results when the ratio of the number of Middle-Eastern asylum seekers (ME AS) over the number of German nationals is considered as the treatment intensity measure. We restrict the sample to survey year 2013 and 2015 in panel (A) and (C) and in panel (B) and (D) the sample is restricted to survey year 2013 and 2016. Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 4.A. 11: Treatment intensity checks (Cluster robust inference using wild cluster bootstrap)**

|   | (1)                    | (2)                    | (3)                    | (4)                           | (5)           | (6)           | (7)       | (8)                 | (9)                           | (10)          | (11)   |
|---|------------------------|------------------------|------------------------|-------------------------------|---------------|---------------|-----------|---------------------|-------------------------------|---------------|--------|
|   | Economic impact        |                        |                        |                               | Social impact |               |           |                     | Well-being effects            |               |        |
|   | Unemployment<br>status | Log<br>weekly<br>hours | Log<br>hourly<br>wages | Self-<br>employment<br>status | Immigration   | Worries about |           | Social assimilation |                               | Satisfactions |        |
|   |                        |                        |                        |                               |               | Crime         | Hostility | Feel<br>German      | Connect<br>to Home<br>country | Life          | Health |
| <b>Panel (A): Ratio of Middle-Eastern (ME) refugees over German nationals, 2013 and 2015</b>          |                        |                        |                        |                               |               |               |           |                     |                               |               |        |
| Treat ×<br>$\frac{ME\ refugees}{German\ population}$  | -21.65**               | 26.30                  | -16.40*                | 0.968                         | -84.70        | -53.99        | -54.87    |                     |                               | -8.876        | -129.7 |
| Observations  | 8,742                  | 7,557                  | 7,511                  | 8,742                         | 5,714         | 5,714         | 5,714     |                     |                               | 5,062         | 5,062  |
| # of respondents  | 6,015                  | 5,289                  | 5,260                  | 6,015                         | 4,581         | 4,581         | 4,581     |                     |                               | 6,015         | 5,289  |
| <b>Panel (B): Ratio of Middle-Eastern (ME) refugees over German nationals, 2013 and 2016</b>          |                        |                        |                        |                               |               |               |           |                     |                               |               |        |
| Treat ×<br>$\frac{ME\ refugees}{German\ population}$  | 0.584                  | 1.312                  | -3.617                 | -3.546*                       | -47.43***     | -26.67        | -26.96*   | 14.23               | 31.22**                       | -4.944        | 24.21  |
| Observations  | 8,257                  | 7,178                  | 7,145                  | 8,257                         | 5,648         | 5,648         | 5,648     | 6,887               | 6,887                         | 4,989         | 4,989  |
| # of respondents  | 5,901                  | 5,200                  | 5,181                  | 5,901                         | 4,686         | 4,686         | 4,686     | 5,501               | 5,501                         | 3,877         | 3,877  |
| <b>Panel (C): Ratio of Middle-Eastern asylum seekers (ME AS) over German nationals, 2013 and 2015</b> |                        |                        |                        |                               |               |               |           |                     |                               |               |        |
| Treat ×<br>$\frac{ME\ AS}{German\ population}$  | -11.34*                | 15.66*                 | -8.830                 | 0.0937                        | -50.91*       | -40.22        | -34.05    |                     |                               | 4.782         | -84.44 |
| Observations  | 8,742                  | 7,557                  | 7,511                  | 8,742                         | 5,714         | 5,714         | 5,714     |                     |                               | 8,742         | 7,557  |
| # of respondents  | 6,015                  | 5,289                  | 5,260                  | 6,015                         | 4,581         | 4,581         | 4,581     |                     |                               | 6,015         | 5,289  |

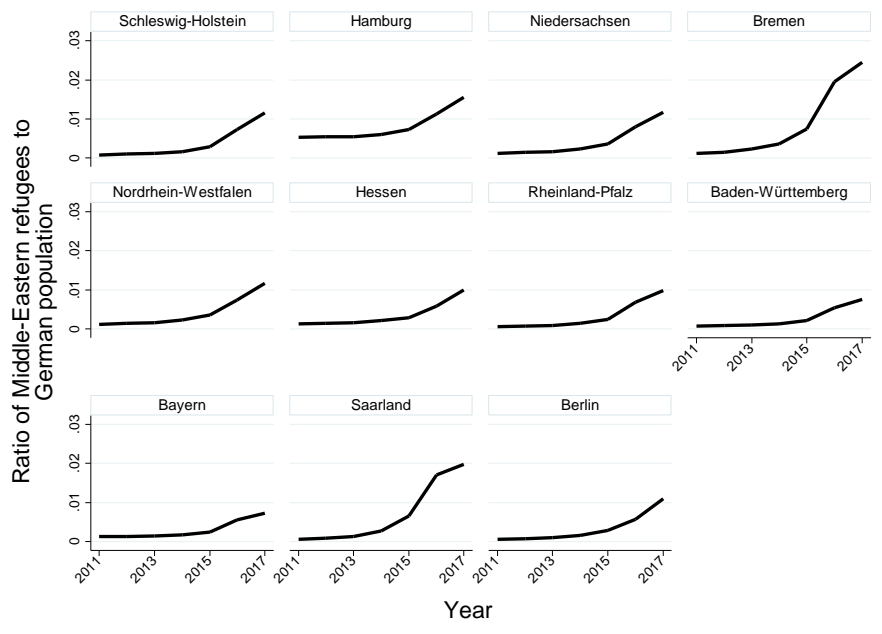
**Panel (D): Ratio of Middle-Eastern asylum seekers (ME AS) over German nationals, 2013 and 2016**

|                  |                          |       |        |         |           |         |        |       |         |        |       |
|------------------|--------------------------|-------|--------|---------|-----------|---------|--------|-------|---------|--------|-------|
| Treat ×          | -0.0575                  | 0.929 | -1.175 | -2.168* | -25.07*** | -15.90* | -14.43 | 11.47 | 17.10** | -1.386 | 17.14 |
|                  | <i>ME AS</i>             |       |        |         |           |         |        |       |         |        |       |
|                  | <i>German population</i> |       |        |         |           |         |        |       |         |        |       |
| Observations     | 8,257                    | 7,178 | 7,145  | 8,257   | 5,648     | 5,648   | 5,648  | 6,887 | 6,887   | 4,989  | 4,989 |
| # of respondents | 5,901                    | 5,200 | 5,181  | 5,901   | 4,686     | 4,686   | 4,686  | 5,501 | 5,501   | 3,877  | 3,877 |

Source: SOEP v34 2013-2017, unbalanced panel, own calculations.

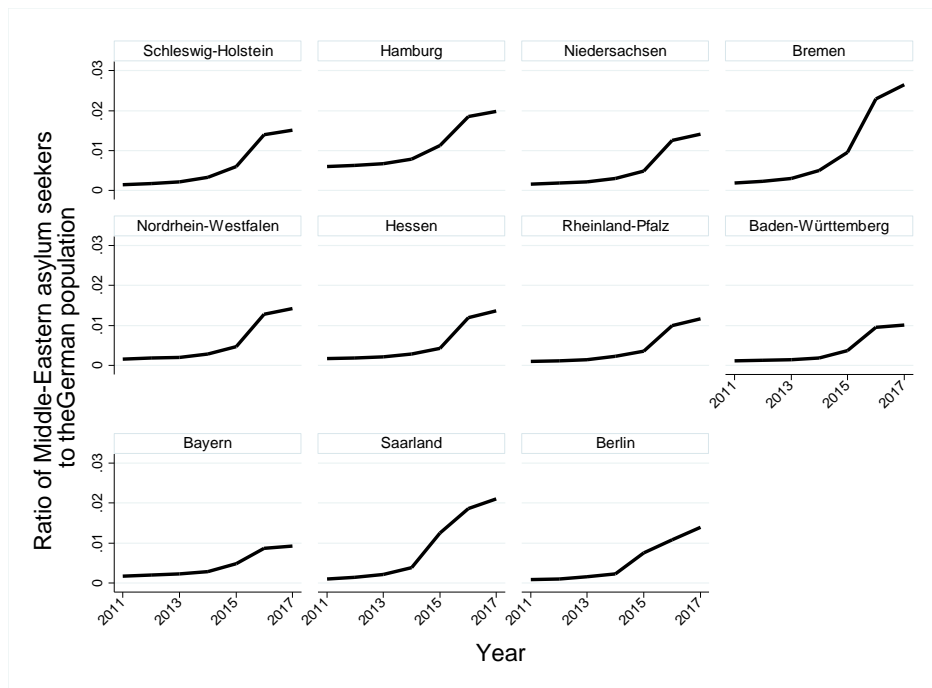
Notes: In this table, we show the economic, social and well-being impact of ERC on existing immigrants with a continuous measure of the treatment. We restrict the sample to working-age non-refugee immigrants (1st and 2nd generation) in West Germany. Columns (1) and (4) include information on immigrant respondents active in the labor market, whereas columns (2) and (3) include employed respondents only. Columns (5)-(11) include information on full sample observations which includes respondents active as well as inactive in the labor market. In panel (A) and (B), we consider the ratio of the number of Middle-Eastern (ME) refugees over the total number of German nationals in that state. Panel (C) and (D) show the results when the ratio of the number of Middle-Eastern asylum seekers (ME AS) over the number of German nationals is considered as the treatment intensity measure. We restrict the sample to survey year 2013 and 2015 in panel (A) and (C) and in panel (B) and (D) the sample is restricted to survey year 2013 and 2016. Control variables include all the control variables used for our baseline specifications in Table 4.3. Robust standard errors (clustered at individual level) in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Figure 4.A.1: Ratio of refugees from the Middle-East to German population**



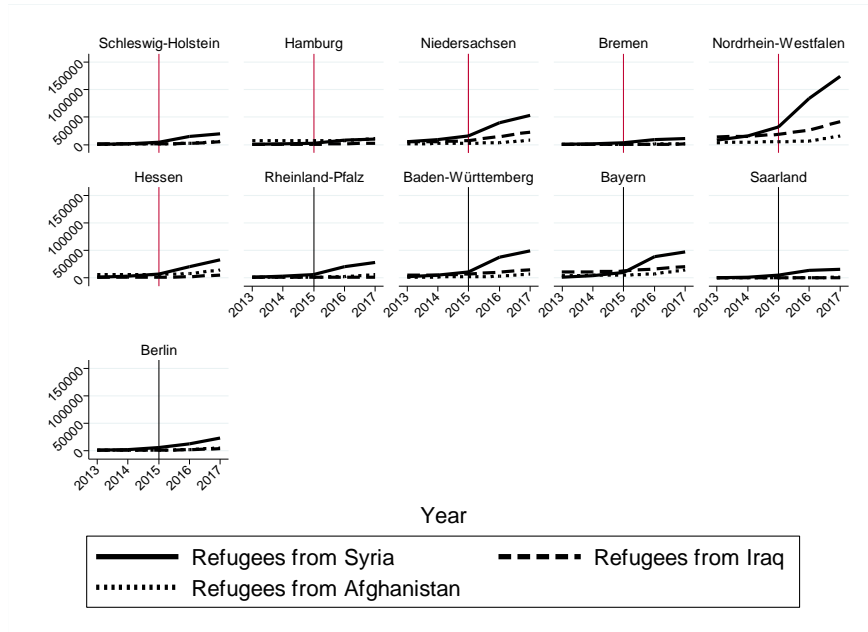
Data source: Federal Statistical Office, own calculations.

**Figure 4.A.2: Ratio of asylum seekers from the Middle-East to German population**



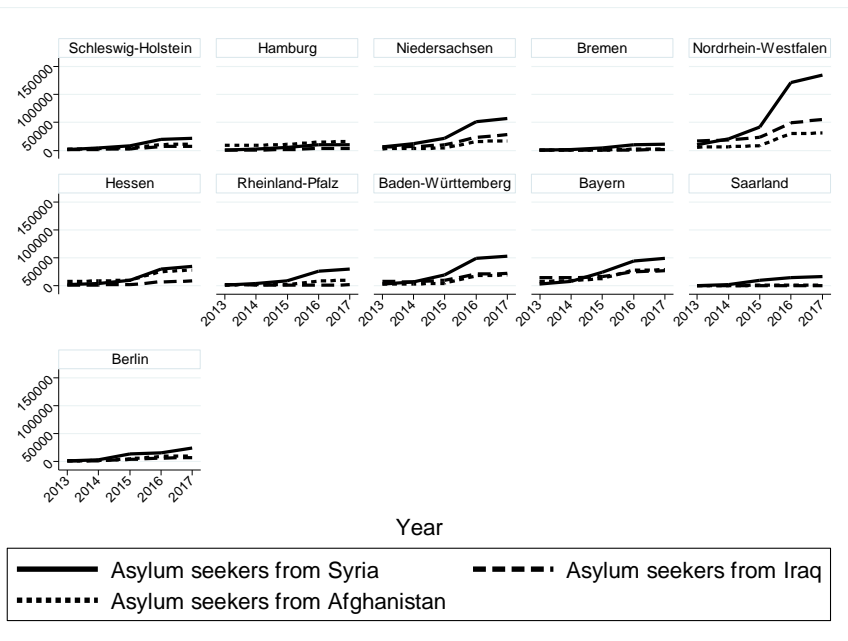
Data source: Federal Statistical Office, own calculations.

**Figure 4.A.3: Number of refugees from Syria, Iraq and Afghanistan**



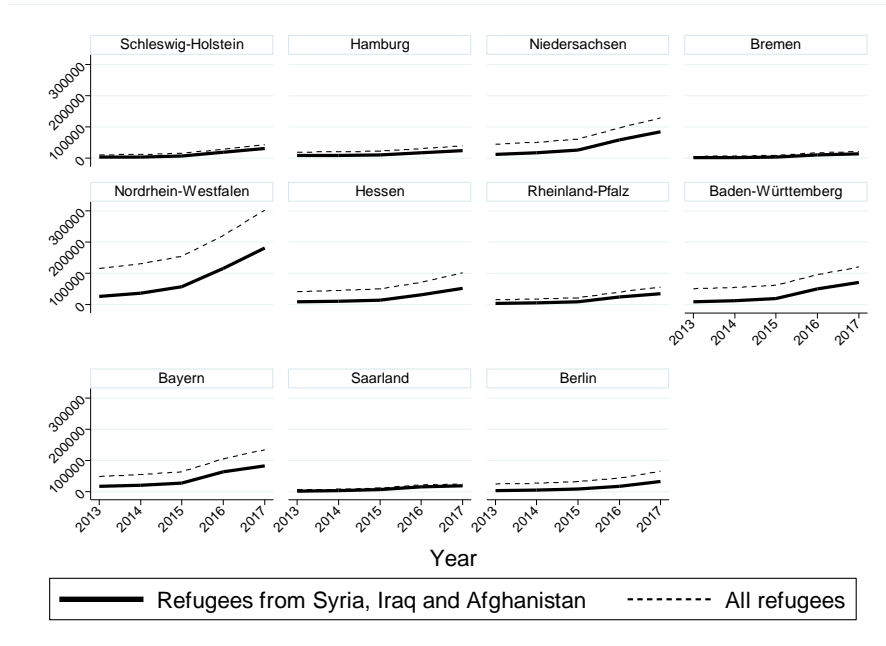
Data source: Federal Statistical Office, own calculations. The vertical line denotes the year 2015.

**Figure 4.A.4: Number of asylum seekers from Syria, Iraq and Afghanistan**



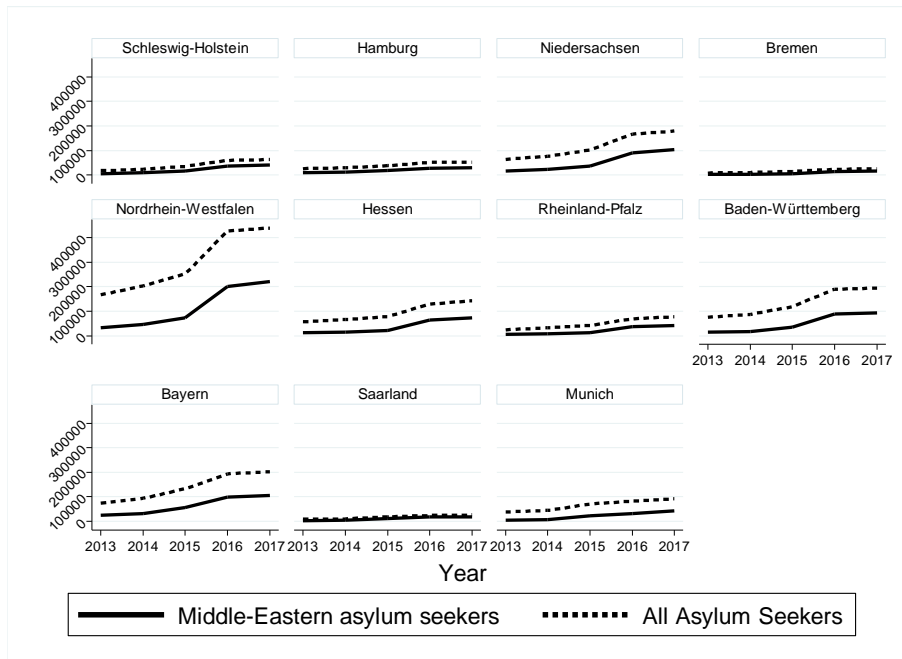
Data source: Federal Statistical Office, own calculations.

**Figure 4.A.5: Number of refugees from the Middle-East**



Data source: Federal Statistical Office, own calculations.

**Figure 4.A.6: Number of asylum seekers from the Middle-East**



Data source: Federal Statistical Office, own calculations.





## 5 Conclusion

The thesis presents three essays dealing with political, economic and social aspects of international immigration. The findings of the empirical investigation conducted are highly relevant, timely and insightful.

The second chapter of the thesis emphasizes the potential of international immigration in changing the political equilibrium of the host countries. Using individual-level data from a number of European countries, we show that the country's immigrant population share (IPS) is positively associated with citizens' likelihood to vote to anti-immigration far-right parties in national elections. Thereafter, we find that citizens' economic and cultural concerns over immigration also share a positive relationship with the country's IPS. Our main contribution is that we investigate the country-level determinants of citizens' economic and cultural concerns over immigration. Our results show that there is a substantial cross-country variation in citizens' response to increases in the IPS. In particular, we demonstrate that economic concerns over immigration are more sensitive to the IPS in countries with 1) higher unemployment rates and 2) lower levels of per capita income. On the other hand, with regards to macro-cultural channels, the results find that cultural concerns over immigration depend neither on the country's historical religious diversity nor its collectivistic national culture. Our findings recommend caution in extrapolating results regarding attitudes toward immigration across countries or periods with different macroeconomic conditions.

Many European countries have suffered violent Islamist terrorist attacks since the dawn of the 21st century. Given that the majority of the perpetrators of these attacks were natives belonging to Islamic religions, the question of the social assimilation of Muslims living in the West has come to the forefront of policy discussions. The third and fourth chapters of the thesis are devoted to understanding the determinants of Islamic immigrants' economic and social assimilation into the host country. The third chapter studies the impact of news revelations associated with crimes committed by the right-wing group, the National Socialist Underground (NSU), in the past targeting Turkish immigrants in Germany on their social assimilation outcomes. We find that the revelations triggered the fears of future xenophobic hostility among the targeted group and resulted in their reduced social assimilation outcomes measured in their self-reported self-identification as German.

The main findings of chapter three guide us towards future research. First, although the study focuses on the news treatment of the xenophobic incident in Germany, similar experimental set-up can be implemented to study the effects of xenophobic incidents in other countries, e.g. the xenophobic event of July 22 2011 in Norway, Quebec City mosque shooting of January 19 2017 in Canada, Christchurch mosque shooting of

March 15 2019 in New Zealand, etc. Second, albeit interesting, the chapter does not investigate whether the respondent's behavioural outcomes such as their political orientation, voting patterns, return migration intentions were impacted by the 2011 treatment. Finally, as the focus of the chapter was to study the effects associated with newspapers' coverage of the NSU episode, future research can study the role of the respondent's news consumption behaviour and newspapers' qualitative and quantitative coverage of the episode in intensifying the treatment effects in greater details. In particular, the following questions can be asked: 1) What is the role of the respondent's news consumption behaviour, i.e. preferred newspaper, preferred medium (online/print media) and frequency of news consumption, in intensifying the treatment effects? 2) Does the political biases of newspapers (denoted by their left-right inclinations) mediate in their coverage of the NSU episode and eventually affected the reader's perceptions of the events? These questions were not answered in the chapter due to data availability issues. However, a new dataset can be constructed using newspaper archives, which can better address these issues.

The fourth chapter studies another pertinent source of variation, which intervenes in immigrants' socio-economic assimilation into the host environment, i.e. new immigration flows. In this increasingly globalized world, the sudden and massive inflow of culturally closer immigrants can impose externalities on the existing immigrants. We study the impact of the massive inflows of Middle-Eastern refugees to Germany in 2015, an event referred to as European refugee crisis (ERC hereafter), on the existing immigrants originating from Turkey and Middle-Eastern and North African countries (T-MENA) in Germany. First, our results suggest that T-MENA immigrants in Germany observed a substantial reduction in their unemployment in the year 2015. We interpret these findings to be consistent with the differential demand shock imposed by the consumption decisions of the culturally similar refugee immigrants on T-MENA immigrants. We additionally find that the reduction in unemployment was in fact transitory and the effect dissipated coinciding with refugees' delayed yet incremental labor market integration. Second, we study the social impact of ERC. We find that although both T-MENA and non-T-MENA immigrants showed increased worries about immigration, crime, and xenophobic hostility after the ERC, T-MENA immigrants reported significantly smaller increases in these worries. Additionally, we find that T-MENA immigrants were increasingly likely to bond with their home country's culture while their assimilation of German identity was unaffected. We do not find any effects on their subjective well-being, measured in self-reported satisfaction with life and health.

The chapter guides us towards future research that studies the impact of new immigration flows on existing immigrants. First, it suggests that a similar experimental set-up can be implemented to study the impact of ERC in other European countries. For example, in Sweden, inflows of asylum seekers reached record highs during the ERC while the country has measurably large Diaspora of existing T-MENA immigrants. Second, new research can provide us a deeper understanding of the ERC's impact on social integration measures

that are shown to be important for immigrants' assimilation and general well-being in the host environment. More specifically, the ERC's impact on T-MENA immigrants' labor market participation, inter-ethnic marriage rates and networking with friends from other ethnicities can be studied. These measures are available in the existing databases and provide insightful avenues for future research.