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Working Paper

Redistribution Preferences, Attitudes towards Immigrants, and Ethnic Diversity

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IAB-DISCUSSION PAPER

Articles on labour market issues

23|2020 Redistribution Preferences, Attitudes towards Immigrants, and Ethnic Diversity

Mustafa Coban



Redistribution Preferences, Attitudes towards Immigrants, and Ethnic Diversity

Mustafa Coban (IAB)

Mit der Reihe „IAB-Discussion Paper“ will das Forschungsinstitut der Bundesagentur für Arbeit den Dialog mit der externen Wissenschaft intensivieren. Durch die rasche Verbreitung von Forschungsergebnissen über das Internet soll noch vor Drucklegung Kritik angeregt und Qualität gesichert werden.

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Abstract

Ethnic diversity plays a crucial role in shaping national economic and social policy. A change in the ethnic composition of a country affects citizens' everyday life and social environment and may challenge present societal values, such as solidarity with and trust in fellow citizens. Based on the European Social Survey, I show that more contact with members of other ethnic groups in daily life is positively related to more open attitudes of natives towards immigrants. More interethnic contact of natives reduces their social distance to immigrants, their perception of immigrants as a threat to society, and their opposition to future immigration. In turn, an open-minded and tolerant attitude promotes mutual trust and solidarity within society. Since attachment to fellow residents and a feeling of fellowship are essential drivers for supporting governmental redistribution measures, I argue that there is no direct, but an indirect relationship between ethnic diversity and natives' support for redistribution, with attitudes towards immigrants and immigration acting as mediators. By applying bivariate recursive probit estimations, I can decompose the predictors' marginal effects on natives' support for redistribution into a direct effect and an indirect effect that works through natives' attitudes towards immigrants. A decomposition method that has so far been relatively unnoticed in the empirical literature. Our results reveal that perception of immigrants as a threat to societal values or country's economy decrease natives' support for redistribution substantially by 15 to 22 percent. The same applies to natives who reject future inflows of immigrants. Natives' desire for social distance to immigrants in private and working life, however, does not affect their demand for redistribution. Thus, the diffuse fear of losing intangible goods triggered by immigration is substantial in the formation of natives' socio-political attitudes. Living in ethnically more diverse neighborhoods, though, increases natives' support for redistribution by 0.4 to 1.5 percent through the promotion of pro-immigrant attitudes and stronger solidarity with fellow residents. These results are robust to IV estimation strategies, which control for reverse causality and the possibility of natives' selective out-migration.

Zusammenfassung

Ethnische Diversität spielt eine gewichtige Rolle in der Ausgestaltung und Entwicklung nationaler Wirtschafts- und Sozialpolitiken. Eine Veränderung der ethnischen Zusammensetzung eines Landes wirkt sich auf den sozialen Alltag und das soziale Umfeld der Bürger aus und kann bestehende Normen und Werte der Mehrheitsgesellschaft, wie Solidarität mit und Vertrauen zu Mitbürgern, auf den Prüfstand stellen. Anhand des European Social Survey zeigen wir, dass ein mehr an Kontakt im Alltag zu Mitgliedern anderer ethnischer Gruppen sich in einer offeneren Haltung der Einheimischen gegenüber Einwanderern widerspiegelt. Mehr interethnischer Kontakt der Einheimischen senkt die soziale Distanz zu Einwanderern, die Wahrnehmung von Einwanderern als Bedrohung für die Gesellschaft und die Ablehnung von zukünftiger Einwanderung. Eine aufgeschlossener und toleranter Haltung fördert wiederum gegenseitiges Vertrauen und Solidarität innerhalb der

Gesellschaft. Da Solidarität in Form einer Verbundenheit mit den Mitbürgern des Landes eine wesentliche Triebkraft für die Unterstützung von staatlichen Umverteilungsmaßnahmen ist, begründen wir, dass es keine direkte, sondern eine indirekte Beziehung zwischen der ethnischen Vielfalt und der Präferenz für Umverteilung der Einheimischen gibt, indem die Einstellung gegenüber Einwandern als Mediator wirkt. Durch die Anwendung bivariater rekursiver Probit-Schätzungen können wir den Einfluss von Determinanten auf die Umverteilungspräferenz der Einheimischen in einen direkten Effekt und einen indirekten Effekt, der durch die Einstellung der Einheimischen gegenüber Einwanderern wirkt, zerlegen. Eine Dekompositionsmethode, die bisher in der empirischen Literatur relativ unbemerkt geblieben ist. Unsere Ergebnisse zeigen, dass die Wahrnehmung von Einwanderern als Gefährder der gesellschaftlichen Wertvorstellungen oder als Bedrohung für die wirtschaftliche Prosperität des Landes die Unterstützung staatlicher Umverteilung erheblich um 15 bis 22 Prozent senkt. Das Gleiche gilt für Einheimische, die eine zukünftige Einwanderung ablehnen. Keinen Einfluss auf die Umverteilungspräferenz der Einheimischen hat hingegen ihr Wunsch nach sozialer Distanz im Privat- und Arbeitsleben. Abstrakte und gesellschaftspolitische Ängste, ausgelöst durch die Einwanderung, spielen somit eher eine signifikante Rolle in der Formierung sozialpolitischer Wünsche der Einheimischen. Das Leben in ethnisch vielfältigeren Nachbarschaften, hingegen, erhöht die Unterstützung der Einheimischen für staatliche Umverteilung um 0,4 bis 1,5 Prozent, indem eine einwandererfreundliche Einstellung und solidarisere Position eingenommen wird. Diese Ergebnisse sind robust gegenüber IV-Schätzungsstrategien, die eine umgekehrte Kausalität und die Möglichkeit einer selektiven Abwanderung der Einheimischen kontrollieren.

JEL

C30, D31, D63, D72, F22, H20

Keywords

attitudes towards immigrants, bivariate recursive model, ethnic diversity, immigration, support for redistribution

1 Introduction

The outbreak of the Syrian civil war in 2011 and the subsequent migration of Syrian, Iraqi, and Afghan refugees via Turkey and the Balkans to Europe have put immigration policy back onto the agenda of policymakers and economists. The *European refugee crisis* reached its peak in 2015 with almost 1.26 million first-time asylum applications, the highest number since the fall of the Iron Curtain. Germany (441900), Hungary (174435), Sweden (156195), Austria (85520), and Italy (83245) had the most first-time asylum applicants in Europe. The majority of first-time asylum seekers came from Syria (28.84 percent), Afghanistan (14.18 percent), Iraq (9.67 percent), Kosovo (5.32 percent), and Albania (5.30 percent) in 2015 (European Commission, 2019b). This sudden surge in the extent of foreign-born people in the European host countries brought out previously hidden anxieties. In particular, voters in Western and Central Europe are concerned about the economic and societal consequences of immigration. As a result of the refugee crisis, far-right parties were able to mobilize voters in many countries by stigmatizing immigrants as a threat to the economy, cultural values, and national safety.

Changes in the ethnic composition of a society generate fears and concerns among natives about the consequences of such a societal transformation. The fear of changes in daily life and the expected loss of present societal values, such as national, cultural and religious identity, may generate negative attitudes towards immigrants and increase the demand for more restrictive immigration policy among natives. On the other hand, more interethnic contact due to greater ethnic diversity could enhance tolerance towards and solidarity with immigrants among natives. Tolerance, solidarity, and trust, in turn, are crucial components of individual social capital, which affects an individual's attitudes towards the national welfare state and social policy. The empirical literature generally focuses on either the relationship between ethnic diversity and natives' attitudes towards immigrants or the link between interethnic contact and natives' demand for redistribution. The latter, however, neglects the mediation of social capital between ethnic diversity and the support for redistribution. This study overcomes these shortcomings and brings these two strands of literature together by applying a joint estimation model. Our bivariate recursive framework strictly considers the mediation of natives' solidarity with immigrants in order to investigate and quantify the underlying mechanism between ethnic diversity and the support for redistribution. Therefore, the econometric specification proposes that interethnic contact directly determines natives' attitudes towards immigrants and indirectly affect natives' support for redistribution by adjusting their attitudes towards members of other ethnic groups. The bivariate recursive probit model enables the analytical decomposition of the effect mechanisms into a direct and an indirect channel. Determinants' direct effects have an immediate impact on the redistribution preference, whereas their indirect effects measure the impact on natives' support for redistribution by changing their attitudes towards immigrants or immigration. This decomposition is mostly unknown in the empirical literature and has so far only been applied to the bivariate recursive binary probit case. Thus, the contribution to the econometric method literature is twofold. To the best of our knowledge, this is the first study that derives and applies the decomposition of marginal effects for a bivari-

ate recursive mixed probit estimation consisting of an ordinal and a binary endogenous variable. Additionally, by applying the delta method, this study provides a suitable solution for calculating adequate standard errors of the average marginal direct and indirect effects.

Using the European Social Survey (Wave 7) allows the inclusion of a wide range of views that natives have about immigrants' influence on the social fabric of their respective countries. The individual data provide adequate information on respondents' socioeconomic and demographic characteristics, as well as their answers to many questions concerning immigration policy, immigrants' influence on social constructs, and their relationship with immigrants. Natives' attitudes towards immigrants are divided into two dimensions. The variables of the first dimension (*social distance*) measure a native's real and desired social distance from immigrants in their private life and at the workplace. Thus, they map natives' apprehension of increased social contact with immigrants. Meanwhile, the variables of the second dimension (*outgroup threat*) measure natives' perception of the threat to societal values (culture, way of life, and religious beliefs) and tangible goods (national economy) of the majority society presented by immigrants. Last, natives' demand for different immigration patterns, which differ in ethnic and educational composition, is linked to their demand for redistribution. The estimation results show that there is a significantly positive relationship between the frequency of interethnic contact in daily life and natives' pro-immigrant and pro-immigration attitudes. Furthermore, more interethnic contact increases natives' demand for redistribution significantly by strengthening their pro-immigrant and pro-immigration attitudes. However, this indirect effect is relatively small in magnitude.

Whereas social distance measures have no significant association with natives' support for redistribution, perceived outgroup threats, and opposition to substantial immigration, however, decrease natives' redistribution preference. In the analysis of different immigration patterns, this reduction is more pronounced for immigration of unskilled workers than for immigration from non-European countries. Since reverse causality and natives' selective out-migration would produce biased and inconsistent estimates, interethnic contact is instrumented by the share of foreign-born in the region where the natives live. Once controlled for endogeneity issues, the previous results are confirmed.

The remainder of the paper is organized as follows: Section 2 provides a literature review, and Section 3 describes the links between ethnic diversity, attitudes towards immigrants, and a native's support for redistribution based on the predictions of the intergroup contact theory and conflict theory. Section 4 presents the data sources of the employed variables, and Section 5 describes the econometric specification. Section 6 shows the estimation results as well as extensions using the regional share of immigrants as a valid instrument to control for selective out-migration and reverse causality. Finally, Section 7 concludes.

2 Related Literature

The first strand of literature examines whether there is a direct relationship between ethnic diversity and individuals' support for redistribution.¹ Luttmer (2001) shows that survey respondents in the United States are supportive of more redistribution if the proportion of their same-ethnic peers is higher among social benefit recipients in their immediate area. Focusing on the black/white gap in terms of support for redistribution in the United States, Alesina/Glaeser/Sacerdote (2001) show that whites who assess blacks as "lazy" prefer less redistribution, whereas whites who have had social contact with blacks at least once support more redistribution. Moreover, Lind (2007) finds similar results and shows that when blacks identify more strongly with whites, blacks are supportive of less redistribution. For whites, however, stronger identification with their same-ethnic peers has no significant effect on their support for redistribution. In a cross-country analysis of European countries, Senik/Stichnoth/Straeten (2009) ascertain only a weak association between the perceived share of immigrants and natives' support for redistribution. A similar result is obtained by Stichnoth (2012) regarding the desire for a more generous unemployment system. As pointed out by Burgoon (2014), the effect of the perceived immigration population ratio may be upwardly biased, since natives with anti-immigrant attitudes regularly overpredict the ratio in surveys. In contrast to the findings of Lee/Roemer/der Straeten (2006), Gerdes/Wadensjö (2008) identify no significant link between the immigrant population share and votes for pro-redistribution parties in Denmark. For Sweden, Eger (2010) confirms a negative link between immigrant population share and the support for redistribution. Furthermore, van Oorschot (2008, 2006) shows that the native population in Europe generally sees immigrants as substantially less deserving of social benefits and protections than other vulnerable groups, such as the elderly, disabled, or unemployed.

Extensive research has also been carried out on the link between ethnic diversity and natives' attitudes towards immigrants or, more generally, on natives' social capital. However, the empirical literature is divided. Some evidence supports the predictions of *conflict theory*, i.e. greater ethnic diversity leads to an increase in anti-immigrant attitudes and a decline in solidarity with immigrants due to more intense competition between natives and immigrants for tangible and intangible goods. Regarding natives' social capital, Alesina/La Ferrara (2002) ascertain that, generally, trust in fellow citizens is lower in more ethnically diverse cities in the United States. Findings of lower trust are also obtained for more ethnically and linguistically diverse communities in Australia (Leigh, 2006b), a higher population share of persons with a migration background in Sweden (Gustavsson/Jordahl, 2008), and in a cross-country empirical analysis (Leigh, 2006a). Concerning anti-immigrant attitudes, Scheepers/Gijsberts/Coenders (2002) determine a positive correlation between the share of a country's residents who are non-EU citizens and ethnic exclusionism in a cross-country analysis of European countries. However, natives living in urban areas with a much higher concentration of immigrants have more favorable attitudes towards immigrants than do natives who live in rural areas. Semyonov/Raijman/Gorodzeisky (2006) report similar results based

¹ Stichnoth/Van der Straeten (2013) and Alesina/La Ferrara (2005), among others, provide extensive summaries of the empirical literature.

on an anti-immigrant index which measures and totals natives' economic, personal, and societal concerns regarding immigrants as well as their anti-immigration policy opinions. In contrast, Davidov et al. (2008) do not detect any significant effect of the foreign-born population share or the immigrant influx on natives' support for a more restrictive immigration policy once natives' self-transcendence and self-conservation are controlled for. For Germany, Semyonov et al. (2004) show that there is no significant association between the actual share of foreigners at the regional level and natives' perceived outgroup threats, though natives' perception of the share of foreigners in Germany has a weakly significant impact on perceived outgroup threats.

In contrast, there is also some empirical evidence for the *intergroup contact theory*, i.e. a more ethnically diverse environment lowers anti-immigrant attitudes and increases solidarity with immigrants. Empirical evidence for a positive relationship between ethnic diversity and natives' pro-immigrant attitudes is confirmed, for example, for Denmark (Schlueter/Scheepers, 2010) and in an earlier cross-country analysis of European countries (Schlueter/Wagner, 2008). In the United States, Dixon (2006) finds similar results regarding the effect of whites experiencing social contact with Hispanics and Asians. Furthermore, increased interethnic social contact enhances whites' general trust in their fellow citizens in Canada (Stolle/Soroka/Johnston, 2008). Moreover, Laurence (2014) shows that in the United Kingdom, greater ethnic diversity only harms natives' interethnic attitudes and respect for ethnic minorities if natives have no interethnic social contact at all. Finally, van Oorschot/Uunk (2007) ascertain that, for a selection of European countries, natives' solidarity with immigrants increases with higher foreign-born population shares. Since ethnically diverse neighborhoods provide the opportunity for members of a community to experience more frequent and profound interethnic social contact, natives' social capital may depend on positive or negative experiences as well as opportunities to reduce gaps in their knowledge about other groups. In a cross-country analysis of European countries, Savelkoul/Gesthuizen/Scheepers (2011) show that greater regional ethnic diversity is associated with a higher frequency of interethnic social contact between natives and non-natives. The latter, meanwhile, increases natives' social capital, measured by the frequency of social encounters and aid provided.

3 Solidarity, Perceptions and Support for Redistribution

Governmental redistribution follows the distributive logic of need and capacity (Freeman, 1986). The former depends on socially defined concepts of poverty and neediness, which determine the distribution of transfers to entitled recipients. The latter refers to the distribution of fiscal burden on taxpayers according to their performance in the labor market. Thus, it is crucial for a tax and transfer system that there is some feeling of fellowship and trust present among recipients and payers. A large volume of empirical literature has shown that solidarity and trust are positively related to support for governmental social policy and redistribution (see Alesina/Glaeser, 2004). Solidarity and trust depend on socio-economic and demographic characteristics, personal life experiences, the conditions of the immediate environment, the intensity and quality of social contact, and the political institutions present (Alesina/La Ferrara, 2002). In general, they are components of an individual's social capital, which can be divided into *bonding social capital* and *bridging social capital*. The first refers to an individual's social contact with persons who are similar to them in any aspect. The latter describes social contact with persons who are in some way different (Putnam, 2007). Thus, the willingness to support governmental redistribution policies depends on solidarity with ingroup members, i.e. those residents who are similar to me, and with outgroup members, i.e. those residents who are dissimilar to me. Taking the ethnic dimension as a differentiating criterion, I consider natives as ingroup members and immigrants as outgroup members. Hence, natives' support for redistribution depends on their solidarity with their peers and immigrants, if both groups are basically eligible for redistribution policies and there is no differentiation by ethnicity. Now, how does natives' solidarity with immigrants change if the ethnic diversity in their neighborhood increases and more social contact with outgroup members is accessible? There are two competing theoretical approaches, the intergroup contact theory and the conflict theory, about the relationship between natives' level of solidarity with immigrants and the frequency of contact with immigrants.

Intergroup contact is a 'face-to-face' contact between persons of different groups, be they ethnically, culturally, linguistically, or socially determined (Pettigrew/Tropp, 2006).¹ However, intergroup contact does not occur when individuals experience geographical but non-verbal contact, because in this case, no information is exchanged between members of different groups (Holland et al., 2007; Valentine, 2008). The intergroup contact theory assumes that negative attitudes towards members of other groups and a group as a whole can be explained by a lack of social contact between the members of both groups. Thus, increasing contact can fill information gaps about members of other ethnicities and can reduce existing prejudices and stereotypes. However, this requires social contact in the way of social connections, which enable conversational exchange between the members of different ethnicities (Hewstone, 2009). By implication, negative experiences as a result of intergroup contact can lead to negative outgroup attitudes or amplify existing

¹ For a literature review of intergroup contact theory, see Hewstone/Swart (2011), among others.

attitudes (Stephan/Stephan, 1985). Furthermore, everyday intergroup contact in schools, at work, and in one's neighborhood can lead to a reduction in anti-outgroup attitudes (Dixon/Rosenbaum, 2004; Pettigrew/Tropp, 2006).

Several channels determine how contact with outgroup members reduces prejudices and stereotypes as well as outgroup threats. Pettigrew (1998a) emphasizes four processes that change majority group members' attitudes: (i) learning about the outgroup, (ii) changing own behavior, (iii) generating affective ties, and (iv) ingroup revaluation. A reduction of prejudices and stereotypes results in the establishment and increase of empathy and solidarity with outgroup members (Tausch/Hewstone, 2010). However, the extent to which the positive effect of social contact with outgroup members can be generalized remains open. Although the contact triggers a change in attitudes towards individual outgroup members, with whom more or less intense contact is maintained, this does not imply that attitudes are also transferred to outgroup members who are not personally known and with whom no contact occurs. Overall, intergroup contact theory predicts that intergroup contact reduces anti-outgroup attitudes and lead to less perceived outgroup threats. Greater ethnic diversity in a region enhances the likelihood of interethnic social contact (Rocha/Espino, 2009). More intergroup contact, in turn, strengthens tolerance, trust, and solidarity between the members of different groups by mitigating the isolation of an individual's group from the others. Thus, expanding an individual's bridging social capital through an increase in ethnic heterogeneity leads to a reduction of personal ethnocentrism.

Diametrically opposed to intergroup contact theory, the conflict theory predicts that the existence of different ethnic, linguistic, and cultural groups leads to more intense competition between these groups for scarce resources (Blalock, 1967). This competition exacerbates the perceived fear of resource shortages for one's group and the perceived threat posed to the interests of one's group. Generally speaking, group members expect the presence of individuals from dissimilar groups to lead to some negative consequences (Stephan/Renfro, 2002; Stephan/Ybarra/Morrison, 2009). In general, competition for resources can be split into competition for tangible and non-tangible resources (Stephan/Stephan, 2000). For instance, the labor and housing market are tangible resources, whereas the cultural and religious landscape of a country is an intangible resource. Moreover, conflict theory implies that the perceived outgroup threat creates and strengthens ingroup members' negative attitudes towards outgroup members, resulting in discrimination and physical conflict between members of different groups (Pettigrew, 1998b; Scheepers/Gijsberts/Coenders, 2002). Ingroup members try to protect or restore the status of their group by developing negative attitudes towards outsiders (Quillian, 1995). In principle, both the perceived threat from outgroups and negative attitudes towards particular outsiders, do not have to be related to each other and can be viewed as stand-alone concepts (Schlueter/Schmidt/Wagner, 2008). Concerning ethnic diversity, conflict theory implies that more interethnic contact increases the potential for conflict between ethnic groups. Individuals distinguish more strongly between members of their ethnic group and members of other ethnic groups. Regular intergroup contact does not lead to a reduction of prejudices and stereotypes towards ethnic outgroup members. Instead, these can even be

confirmed and strengthened through personal experience. In contrast to intergroup contact theory, conflict theory predicts that individuals continue to expand their 'bonding' social capital and are more ethnocentrically active (Putnam, 2007).

Intergroup contact theory and conflict theory differ in terms of the relationship they assume between ethnic diversity and perceived outgroup threat or anti-immigrant attitudes. However, they have in common the association between natives' anti-immigrant attitudes and their less solidarity with or less trust in immigrants. Less solidarity, in turn, decreases natives' support for redistribution, since a part of governmental redistribution also benefits immigrants. If it were possible to transform the tax and transfer system to benefit a single ethnic group solely, natives exhibiting anti-immigrant attitudes could attempt to ensure that governmental redistribution takes place in such a way that only their ethnic group profits from it. The implementation of such a selective redistribution scheme, however, is not possible in the European countries, since income tax policies and most types of social benefits cannot be discriminatory based on ethnicity. Thus, natives who maintain anti-immigrant attitudes and perceive outgroup threat more strongly will have a lower preference for redistribution.

4 Data and Variables

For individual data, I use the seventh wave of the European Social Survey, which covers 21 countries (20 European countries and Israel) as the ultimate sampling unit and contains persons aged 15 and above residing in private households (European Social Survey, 2014). It provides detailed information on respondents' socio-economic and demographic background, their attitudes towards immigrants on both a personal and a general level, and their attitudes regarding immigration policy and sociopolitical issues. The respondents are also asked about the extent to which they agree or disagree with the following statement: “*The government should take measures to reduce differences in income levels*”. In the empirical literature, this question has emerged as an appropriate measure for the individual support for redistribution (see, among others, Burgoon, 2014; Corneo/Grüner, 2000, 2002; Finseraas, 2008; Senik/Stichnoth/Straeten, 2009). Overall, there is a high demand for redistribution in European countries. Almost 71 percent of the respondents chose the top categories “agree” and “strongly agree” (see Table 1). However, the European countries differ

Table 1: Support for redistribution based on the responses to the question:
“*The government should take measures to reduce differences in income levels*”
Shares in percent

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
3.11	11.92	14.25	41.44	29.28

Notes: Calculation based on responses of the native sample, weighted with country-specific design and population weights.
Source: European Social Survey 2014/2015; own calculations. ©IAB

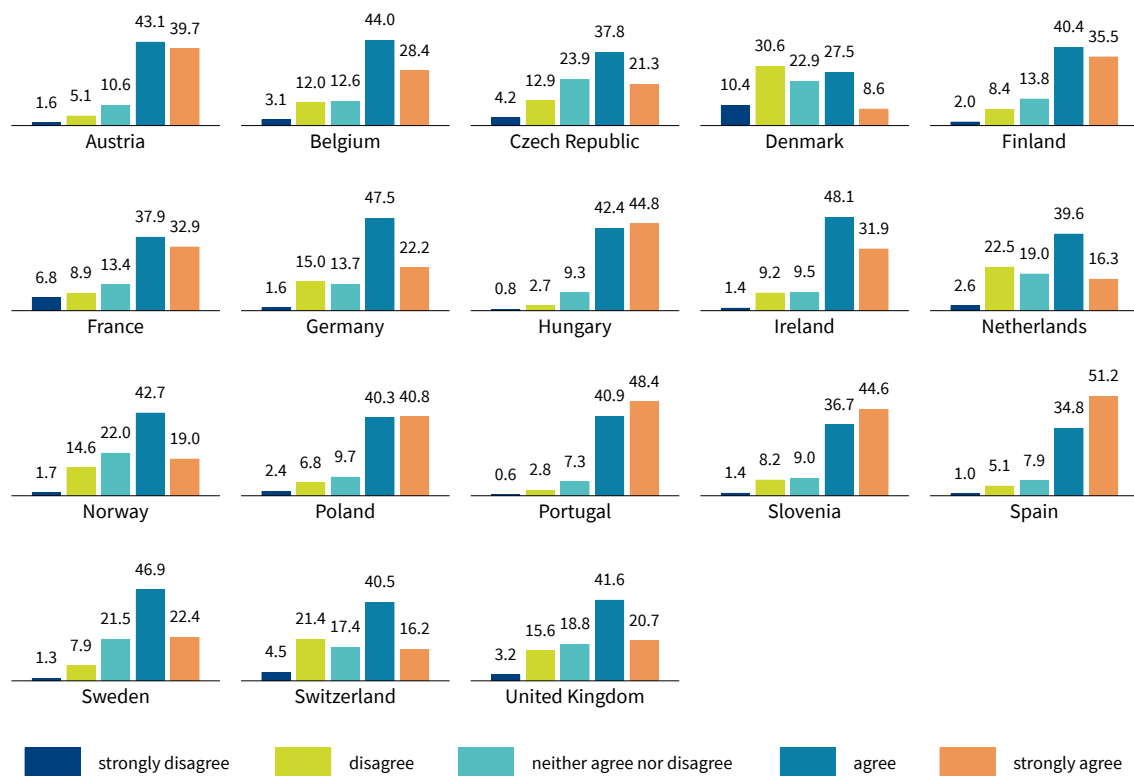
relatively sharply in the distribution of redistribution preferences (see Figure 1). While in Spain and Portugal, the majority of the population strongly supports redistribution measures, in Denmark and Switzerland, roughly 41 and 26 percent, respectively, disagree with governmental measures of reducing income disparities. The stark support for redistribution in Spain and Portugal can be reasoned by a sharp rise in the unemployment rate and income inequality in these countries in the aftermath of the financial crisis and during the ensuing euro crisis. The unemployment rate almost tripled in Spain between 2007 and 2013, and it almost doubled in Portugal during the same period (European Commission, 2019b). Furthermore, inequality of gross incomes increased from 50 to 55 and from 46 to 52 Gini points between 2007 and 2014, respectively, in Spain and in Portugal (Solt, 2016). In line with Meltzer/Richard (1981), a rise in income inequality favors the demand for redistribution among citizens because a more substantial proportion of the population would benefit from a higher governmental redistribution when the income gap between the median voter and the mean voter increases.

4.1 Attitudes towards Immigrants

Besides, the European Social Survey 2014/2015 features a battery of questions about attitudes towards immigrants and immigration. From this pool, I select six questions to map two dimensions

Figure 1: Distribution of support for redistribution across European countries

Native sample weighted with country-specific design weights; shares in percent



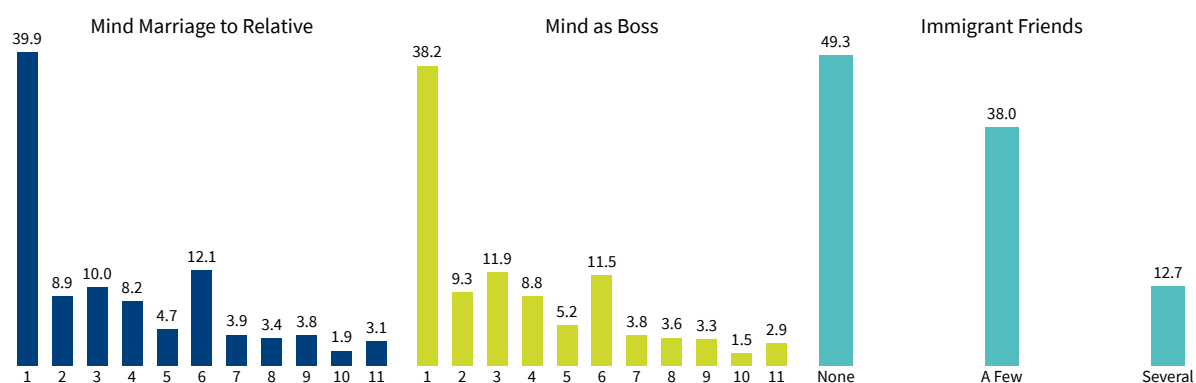
Source: European Social Survey 2014/2015; own calculations. ©IAB

of attitudes towards immigrants.¹ First, the individual relationship of respondents to immigrants is defined by three questions that cover respondents' social distance from immigrants. The variables *Mind Marriage to Relative* and *Mind as Boss* express the respondent's aversion to potential social contact with immigrants in their private or professional life. Thus, both variables cover specific aspects of daily life, which are associated with different types of social contact. Whereas more external aspects determine the organization and the intensity of social contact during working time, respondents choose the nature and frequency of their social contact in their free time independently. Natives may, therefore, evaluate changes in their social contact while working differently than those during free time. Undesirable social contact is more likely to be accepted during working time than during a respondent's free time.

Interestingly, however, the assessment of potential changes in social contact with immigrants during working time and during free time differs only slightly (see Figure 2). Overall, 40 percent of

Figure 2: Overall distribution of social distance measures

Native sample weighted with design and population weights; shares in percent.



Notes: 11-point-scale variables are coded from (1) "absolute positive attitude" to (11) "absolute negative attitude". Therefore, rising values represent stronger anti-immigrant attitudes.

Source: European Social Survey 2014/2015; own calculations. ©IAB

respondents do not mind the marriage of a close relative to an immigrant and do not mind having an immigrant as a supervisor. Despite the Czech Republic and Hungary, this population share varies between 30 and 60 percent for the remaining European countries. Also, the overall distribution of the two variables is quite similar. Apparently, respondents treat changes in social contact in their professional life and their private life equally.² In contrast to these questions, the last variable of the first dimension measures the present social distance of a respondent to immigrants. On average, the majority of natives have no immigrants in their circle of friends. This share ranges between 34 and 62 percent for most European countries, except Hungary, the Czech Republic, and Poland, which show higher shares. For the empirical analysis, all three questions are recoded to binary variables. Based on the original questions' empirical distribution, *Mind Marriage to Relative*

¹ The wording of these questions is in Table 23 in the Appendix.

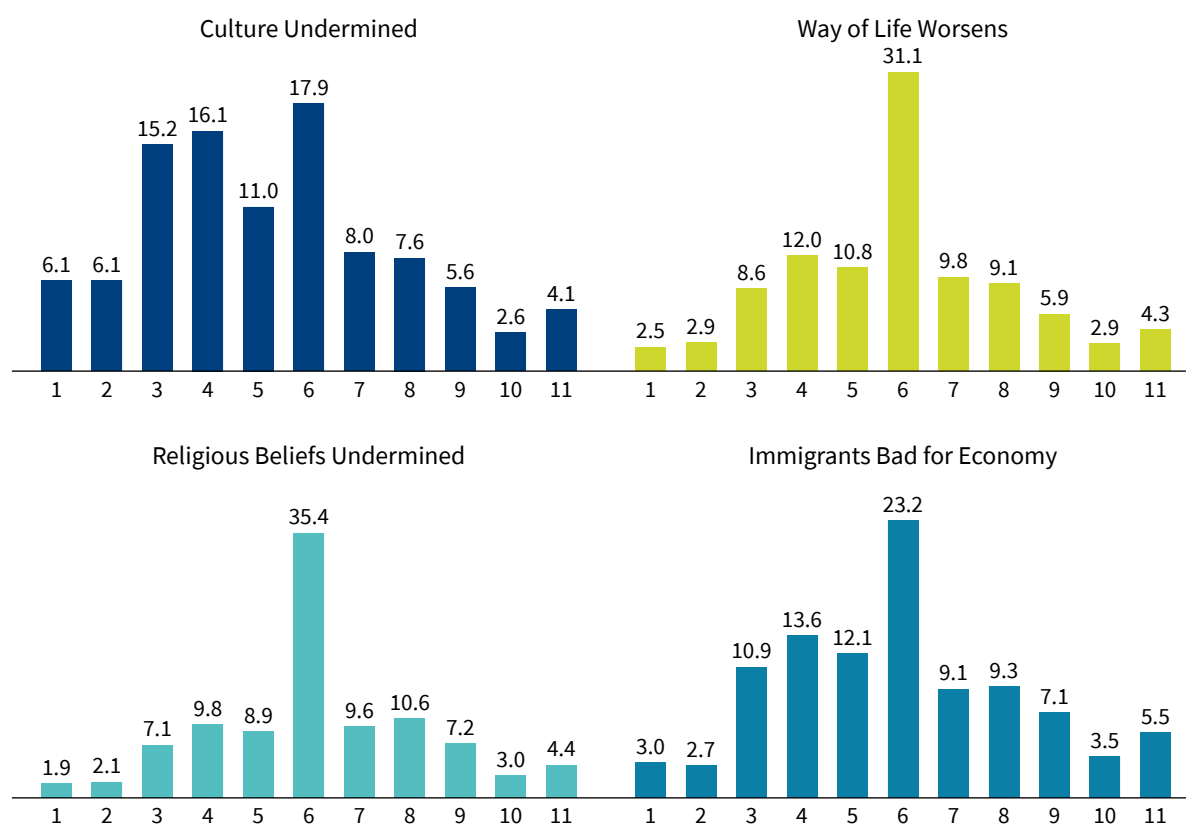
² Since both variables have missing data for Austria, I exclude Austria from estimations that include social distance measures.

and *Mind as Boss* are encoded with one if the original values are between two and eleven and otherwise encoded with zero. The variable *Immigrant Friends* is expressed by the value zero if “a few” or “several” are present and otherwise by the value one.

The second dimension covers natives’ anxiety that immigrants endanger the provision of public goods and social constructs. The selected questions measure the expected or perceived effect of immigrants’ presence on tangible (economy) and intangible (culture, way of life, and religious life) goods. The empirical distribution of respondents’ societal concerns and their perception of out-group threats stands in sharp contrast to the social distance measures (see Figure 3). For all four

Figure 3: Overall distribution of outgroup threats

Native sample weighted with design and population weights; shares in percent.



Notes: 11-point-scale variables are coded from (1) “absolute positive attitude” to (11) “absolute negative attitude”. Therefore, rising values represent stronger negative outgroup attitudes.

Source: European Social Survey 2014/2015; own calculations. ©IAB

questions, the variation in the values is very pronounced. For the variables *Way of Life Worsens* and *Religious Beliefs Undermined*, the middle category is more pronounced compared to the remaining two variables. This pattern is observed similarly for all European countries except Sweden. There, natives’ perceptions are generally more positive. Further, natives assess the influence of immigrants on their culture more positively than immigrants’ impact on their country’s econ-

omy. Taking a closer look at the perceptions in Hungary and the Czech Republic reveals that natives in both countries show a more severe outgroup threat for these measures than the rest of Europe. For empirical evaluation, all four questions are recoded to binary variables. The focus here is to pool those respondents who have an intensely positive attitude towards immigrants within a group. Thus, the four binary variables take a value of zero if the original questions feature values between one and three and the value one for the remaining original values. Thus, the share of a strongly positive attitude varies, on average, between 11 and 26 percent. Again, the Czech Republic and Hungary differ more actively in their shares from other European countries.

There are two reasons for abstaining from a division of ordered variables at the center of the scale. First, the assignment of an individual with an indifferent value to one of the two groups of a binary variable is arbitrary but may change the empirical results to a great extent. Second, focusing on a few values on the positive margin of the variables allows respondents who have strongly positive attitudes to be contrasted with respondents who have weakly negative or strongly negative attitudes.

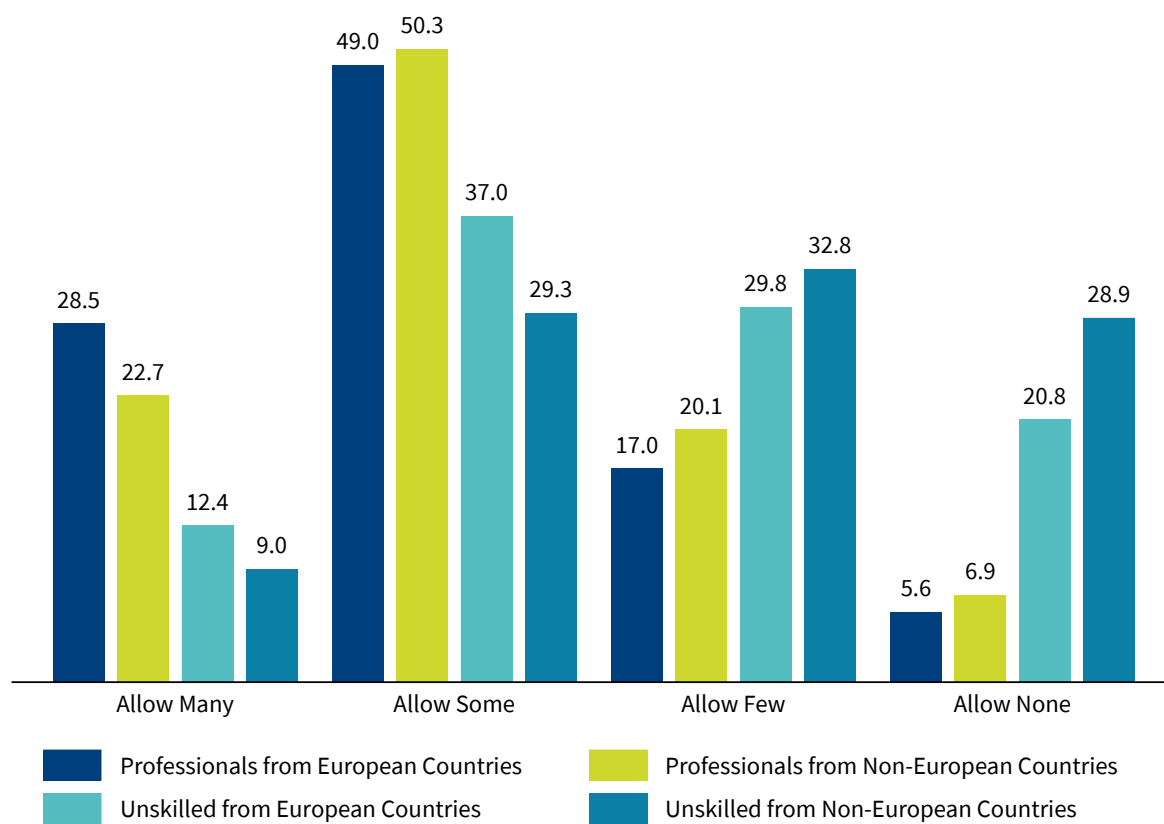
4.2 Attitudes towards Immigration Policy

There is a survey experiment embedded in the European Social Survey to query natives' attitudes towards different patterns of immigration. Respondents were randomly assigned to four groups. They were asked about their attitudes towards highly-skilled immigration from European countries (group 1), highly-skilled immigration from non-European countries (group 2), unskilled immigration from European countries (group 3), and unskilled immigration from non-European countries (group 4).³ By combining the groups in different ways, I can measure natives' attitudes towards immigration from in and outside Europe or natives' attitudes towards unskilled and skilled immigration. First, the new variable *Immigration Attitudes* pools natives' answers of all four. Second, I construct the binary group identifiers *Non-European Immigration* and *Unskilled Immigration*. The former contrasts group 2 and group 4 against group 1 and group 3. The latter contrasts group 3 and group 4 against group 1 and group 2. In Europe, there is both a preference for immigration from European countries and skilled immigration (see Figure 3). There is even more support for skilled immigration than the immigration of Europeans. Whereas one in four natives would allow many skilled immigrants regardless of an immigrant's origin, one in five natives would allow many European immigrants irrespective of an immigrant's skill level. The most considerable difference between the support of many immigrants from Europe and non-Europe is ten percentage points for Norway. In turn, the most substantial difference between the support of many skilled and unskilled immigrants is 28.6 percentage points for Germany. For empirical evaluation, the *Immigration Attitudes* variable is recoded to a binary variable. Again, the focus is to pool those respondents who have strongly positive attitudes towards immigration within a group. Thus, the binary variable takes a value of zero if "allow many" is present and otherwise takes the value one.

³ The wording of these questions is given in Table 24 in the Appendix.

Figure 4: Overall distribution of immigration policy attitudes by skill and origin

Native sample weighted with design and population weights; shares in percent.



Source: European Social Survey 2014/2015; own calculations. ©IAB

4.3 Interethnic Contact and Sample Description

Additionally, attitudes towards immigrants depend on individuals' experience of social contact in daily life. Such contact can either strengthen or moderate social distance and the perception of outgroup threats. The following question of the European Social Survey is suitable to measure the frequency of contact, which does not stem from friendships with immigrants: *"How often do you have any contact with people of a different race or ethnic group [...] when you are out and about?"* Thus, the question relates to contact in daily life, i.e., interactions in public transport, public places, and the respondent's neighborhood. Higher values point to higher immigrant density and greater ethnic diversity in the immediate neighborhood of the respondent. The proportion of respondents with no contact with immigrants in their everyday lives is low, at 12.96 percent (see Table 2). Over

Table 2: Social contact with immigrants based on the question:
"How often do you have any contact with people of a different race or ethnic group...?"
Native sample weighted with design and population weights; shares in percent.

Never	Less than once a month	Once a month	Several times a month	Once a week	Several times a week	Every day
11.97	11.29	7.51	15.19	8.18	20.37	25.49

Source: European Social Survey 2014/2015; own calculations. ©IAB

half of the respondents have contact with immigrants at least once a week. Once I compare the number of immigrant friends and the frequency of interethnic contact, there is an initial indication that interethnic contact does not per se facilitate the establishment of bridging social capital among respondents.

Since socio-economic and demographic characteristics are important determinants of natives' support for redistribution and their attitudes towards immigrants or immigration, a basic set of exogenous variables is prepared. They include the respondent's age, gender, years of education, marital status, employment status, household size, household income, political orientation, size of the area of residence, presence of children, and current or previous type of employment.⁴ Whereas the respondent's employment status and type of employment remain as categorical variables, the other variables have been recoded as binary variables or have been treated as continuous variables.⁵ Individual data on Estonia are excluded from the analysis because there is no information on respondents' household income. Since the share of immigrants at NUTS level 2 is the instrument variable for interethnic contact in the following empirical examination, Israel and Lithuania are excluded from the analysis due to missing regional data and due to a lack of variation at the regional level, respectively. In order to prevent distortions of the estimations due to an insufficient number of observations within NUTS level 2 regions, regions with less than 30 valid observations are not taken into account. In total, the final sample includes 18 European countries and is restricted to natives, i.e. all respondents with a place of birth inside the country of data collection.

⁴ *Political orientation* is a measure of ideological self-assessment on an 11-point-scale, where 1 is "extreme right", and 11 is "extreme left".

⁵ Respondents who are currently in education are not taken into account, as most of them are not entitled to vote.

5 Econometric Specification

Our theoretical framework indicates that natives' attitudes towards immigrants are shaped by their socioeconomic and demographic status as well as by the frequency of social contact with immigrants in everyday life. In turn, these attitudes influence natives' demand for redistribution as a result of adapting solidarity with their fellow residents. Thus, the logical chain stretches from social contact with immigrants through natives' attitudes towards immigrants to their support for redistribution. Consequently, such a framework contains two dependent variables, namely attitudes and support for redistribution. However, the former is simultaneously an endogenous variable of the latter. Since both outcome variables are categorical, this calls for the following recursive bivariate probit model

$$\begin{aligned} y_1^* &= x_1' \beta_1 + \gamma \cdot y_2 + \epsilon_1, & y_1 &= m \quad \text{if} \quad \kappa_{m-1} \leq y_1^* < \kappa_m \quad \text{for} \quad m = 1, \dots, 4, \\ y_2^* &= x_2' \beta_2 + \delta \cdot \psi + \epsilon_2, & y_2 &= 1 \quad \text{if} \quad y_2^* > 0, \end{aligned}$$

where the errors ϵ_1 and ϵ_2 are jointly normally distributed and may be correlated. y_1^* and y_2^* are the latent endogenous variables of the model, which are observed only as their categorical realizations y_1 and y_2 . The first outcome y_1 is ordinal and measures a native's support for redistribution. Since only 3.07 percent of the final sample "strongly disagree" and ordered probit regressions are based on the proportional odds assumption, following Hamilton (1992), the last two categories, "strongly disagree" and "disagree", are collapsed (see Table 1). The second outcome y_2 is binary and represents a native's attitude towards immigrants.¹ Interestingly, the dependent variable y_2^* can be carried into the equation for y_1 as the observed realization y_2 with no particular attention to its endogeneity (see Maddala, 1983: for derivation). In contrast to the linear recursive model, the recursive probit model does not require an exclusion restriction for identification of the model, if there is sufficient variation in the explanatory variables (Wilde, 2000).² Due to our theoretical framework, I add natives' frequency of interethnic contact ψ to the right-hand side of the second outcome equation. This procedure ensures the exclusion restriction even if there is not sufficient variation in the data. The matrices x_1 and x_2 are identical and contain the basic set of natives' socioeconomic and demographic characteristics. Furthermore, the model includes a full set of country dummies to capture country-specific effects, whereby the intercept of x_1 (or x_2) varies across countries. Since the parsed panel is very long with a small N (countries) and a high T (observations), there is no indication for the incidental parameter problem (Chamberlain, 1984).³

¹ For the sake of clarity, I forgo to mention that the second outcome variable also can represent a native's attitudes towards immigration.

² Greene (1998: p. 292) mentions that this property "seem[s] not to be widely known" in the discussion of two-step probit models.

³ The maximum likelihood estimator of the incidental parameters (fixed effects) is consistent as long as $T \rightarrow \infty$ for given N , assuming that there are T observations for each unit $i = 1, \dots, N$. The estimator, however, is inconsistent for given T , as $N \rightarrow \infty$.

5.1 The Recursive Bivariate Probit Model

As estimation parameters of a probit model have no apparent economic interpretation, average marginal effects are calculated in order to assess the significance and importance of variables. Since the first outcome variable y_1 is ordinal, in principle, marginal effects can be estimated for each category separately. In order to improve the clarity and interpretation of the empirical results, I calculate the predictors' average marginal effects on natives' probability of selecting the categories "agree" or "strongly agree". Therefore, I define the collapse of these two categories as a native's *high support for redistribution*. Then, the bivariate recursive model can be expressed as probabilities as follows:⁴

$$\begin{aligned}\Pr(y_2 = 1|x_2) &= \Phi(x'_2\beta_2) , \\ \Pr(y_1 \geq 3, y_2|x_1, x_2) &= \Phi_2(x'_1\beta_1 + \gamma y_2, q_{i2}(x'_2\beta_2 + \delta\psi), q_{i2}\rho) ,\end{aligned}$$

where $q_{i2} = 2y_{i2} - 1$ takes the value +1 if a native has a negative attitude towards immigrants, and otherwise, the value -1.⁵ Our primary interest is to ascertain the extent of the marginal effects of x_1 (or x_2) and y_2 on y_1 . Since some exogenous variables, x_1 (or x_2), occur in both outcome equations, and interethnic contact occurs only in the second outcome equation, the channels through which these exogenous variables affect y_1 differ. Whereas a change in x_1 directly affects y_1 (direct effect), a change in x_2 indirectly influences y_1 via a change in the endogenous variable y_2 (indirect effect). Therefore, it is possible to quantify the indirect effect of interethnic contact ψ , which appears only in the second outcome equation on a native's support for redistribution. Finally, the probability of high support for redistribution $\Pr(y_1 \geq 3, y_2|x_1, x_2, \psi)$ can be expressed by⁶

$$\begin{aligned}& \Pr(y_2 = 1|x_2, \psi) \cdot \Pr(y_1 \geq 3, y_2 = 1|x_1, x_2, \psi) \\ & + \Pr(y_2 = 0|x_2, \psi) \cdot \Pr(y_1 \geq 3, y_2 = 0|x_1, x_2, \psi) \\ & = \Phi(x'_2\beta_2 + \delta\psi) \cdot \frac{\Phi_2(x'_1\beta_1 + \gamma, x'_2\beta_2 + \delta\psi, \rho)}{\Phi(x'_2\beta_2 + \delta\psi)} \\ & + \Phi(-x'_2\beta_2 - \delta\psi) \cdot \frac{\Phi_2(x'_1\beta_1, -(x'_2\beta_2 + \delta\psi), -\rho)}{\Phi(-x'_2\beta_2 - \delta\psi)} \\ & = \Phi_2(x'_1\beta_1 + \gamma, x'_2\beta_2 + \delta\psi, \rho) + \Phi_2(x'_1\beta_1, -x'_2\beta_2 - \delta\psi, -\rho) .\end{aligned}$$

The first and second terms represent the direct and the indirect effect, respectively.

⁴ The respective thresholds are integrated into the matrices

⁵ $\phi(\cdot)$ and $\Phi(\cdot)$ indicate the univariate standard normal density and the cumulative density function, respectively, whereas $\phi_2(\cdot)$ and $\Phi_2(\cdot)$ specify the bivariate normal density and cumulative density function, respectively.

⁶ Greene/Hensher (2010) demonstrate this for the recursive bivariate binary case. Due to the proportional odds assumption, I can translate their implementation from the only binary case to the ordinal or mixed case.

5.2 Direct and Indirect Effects

The marginal effects are obtained by taking the derivatives of (3) with respect to x_1 , x_2 , ψ , and y_2 .⁷ In the calculation of the marginal effects on high support for redistribution, I distinguish between three cases: (i) the marginal effect of a continuous exogenous variable, (ii) the marginal effect of a categorical or binary exogenous variable, and (iii) the marginal effect of the endogenous explanatory variable y_2 . The direct marginal effect of a continuous variable x_{1k} is its derivative with respect to x_1 .⁸

$$\frac{\partial \Pr(y_1 \geq 3, y_2 | x_1, x_2, \psi)}{\partial x_{1k}} = \left[\phi(x'_1 \beta_1 + \gamma) \cdot \Phi \left(\frac{x'_2 \beta_2 + \delta \psi - \rho(x'_1 \beta_1 + \gamma)}{\sqrt{1 - \rho^2}} \right) + \phi(x'_1 \beta_1) \cdot \Phi \left(\frac{-(x'_2 \beta_2 + \delta \psi) + \rho(x'_1 \beta_1)}{\sqrt{1 - \rho^2}} \right) \right] \cdot \frac{\partial(x'_1 \beta_1)}{\partial x_{1k}}.$$

The sign of the direct marginal effect is equal to the sign of the fraction $\partial(x'_1 \beta_1)/\partial x_{1k}$, as the term in the square brackets is positive. In turn, the indirect effect of a continuous variable x_{2k} and ψ is its derivative with respect to x_1 and ψ :

$$\frac{\partial \Pr(y_1 \geq 3, y_2 | x_1, x_2, \psi)}{\partial x_{2k}} = \phi(x'_2 \beta_2 + \delta \psi) \cdot \left[\Phi \left(\frac{x'_1 \beta_1 + \gamma - \rho(x'_2 \beta_2 + \delta \psi)}{\sqrt{1 - \rho^2}} \right) - \Phi \left(\frac{x'_1 \beta_1 - \rho(x'_2 \beta_2 + \delta \psi)}{\sqrt{1 - \rho^2}} \right) \right] \cdot \frac{\partial(x'_2 \beta_2)}{\partial x_{2k}}.$$

The sign of the indirect marginal effect depends on the sign of $\partial(x'_2 \beta_2)/\partial x_{2k}$ and γ . If $\gamma > 0$ holds, the term in the square brackets is positive and the marginal effect takes the same sign as $\partial(x'_2 \beta_2)/\partial x_{2k}$. However, if $\gamma < 0$ applies, the opposite is true. Since ψ appears only in the second outcome equation, the frequency of interethnic contact only has an indirect marginal effect on natives' support for redistribution. Thus, the $\partial(x'_2 \beta_2)/\partial x_{2k}$ has to be replaced with the respective coefficient δ from the second outcome equation. For a discrete exogenous variable x_l , the direct marginal effect can be obtained by taking the difference in the probabilities of high support for redistribution:

$$\begin{aligned} & \Pr(y_1 \geq 3, y_2 | x_1, x_2, \psi, x_{1l} = 1) - \Pr(y_1 \geq 3, y_2 | x_1, x_2, \psi, x_{1l} = 0) \\ &= \left[\Phi_2(x'_1 \beta_1 + \gamma, x'_2 \beta_2 + \delta \psi, \rho) + \Phi_2(x'_1 \beta_1, -x'_2 \beta_2 - \delta \psi, -\rho) \right] \Big|_{x_{1l}=1} \\ &- \left[\Phi_2(x'_1 \beta_1 + \gamma, x'_2 \beta_2 + \delta \psi, \rho) + \Phi_2(x'_1 \beta_1, -x'_2 \beta_2 - \delta \psi, -\rho) \right] \Big|_{x_{1l}=0}. \end{aligned}$$

⁷ More precisely, the average marginal effects are estimated by computing the respective derivatives for each observation, totaling these values, and obtaining the mean. For notational simplicity, the summation operator is suppressed.

⁸ The derivations of the bivariate normal cumulative distribution function are based on the implications of the recursive bivariate binary case in Greene (1998) and Greene/Hensher (2010).

The indirect marginal effect is calculated similarly:

$$\begin{aligned} & \Pr(y_1 \geq 3, y_2 | x_1, x_2, \psi, x_{2l} = 1) - \Pr(y_1 \geq 3, y_2 | x_1, x_2, \psi, x_{2l} = 0) \\ &= \left[\Phi_2(x'_1\beta_1 + \gamma, x'_2\beta_2 + \delta\psi, \rho) + \Phi_2(x'_1\beta_1, -x'_2\beta_2 - \delta\psi, -\rho) \right] \Big|_{x_{2l}=1} \\ & - \left[\Phi_2(x'_1\beta_1 + \gamma, x'_2\beta_2 + \delta\psi, \rho) + \Phi_2(x'_1\beta_1, -x'_2\beta_2 - \delta\psi, -\rho) \right] \Big|_{x_{2l}=0} . \end{aligned}$$

Since the endogenous explanatory variable y_2 is binary, the direct marginal effect on y_1 is the average treatment effect of natives' attitudes towards immigrants on their support for redistribution and calculated as follows (Greene, 2018):

$$ATE(y_2) = \Phi(x'_1\beta_1 + \gamma) - \Phi(x'_1\beta_1) .$$

In order to obtain statistical inference on the accuracy and significance of the average marginal effects, standard errors are calculated using the delta method.

6 Empirical Results

I estimate the recursive bivariate probit model by full information maximum likelihood and carry natives' perceptions of immigrants as the observed realization y_2 into the right-hand side of the first outcome equation (Roodman, 2011). This procedure is applied separately for each dependent variable of the three dimensions *social distance*, *outgroup threat*, and *immigration attitudes*. The first results show that among natives, more interethnic contact in daily life leads to a lower social distance in all three measures (see Table 3). Higher Education or a more leftist political attitude of the natives reduce the probability of a social distance to immigrants. Education generates a liberalization effect through the reduction of prejudices and stereotypes (Hainmueller/Hiscox, 2007; Hello/Scheepers/Gijsberts, 2002). Additionally, highly educated people are usually better informed about foreign cultures, countries, and traditions. Therefore, they can develop sympathy for immigrants more quickly. Living in a suburban or urban area also decreases a native's probability of having anti-immigrant attitudes. The effects of the remaining predictors are mixed. Married natives oppose a relative's marriage to an immigrant more strongly and show a higher probability of having no immigrant friends than unmarried natives. However, married and unmarried natives do not significantly differ in their desire not to have an immigrant as a supervisor. The impact of natives' socioeconomic and demographic characteristics on their support for redistribution is in common with findings from the previous empirical literature. Earning a higher income reduces demand for redistribution, as natives with higher incomes pay more in taxes while receiving less social benefits (Meltzer/Richard, 1981). According to the *prospects of upward mobility* hypothesis, highly educated individuals favor less redistribution because they anticipate future increases in their income (Benabou/Ok, 2001). Private sector employees and self-employed persons prefer less redistribution than public sector employees, since public employment directly benefits from a large government. Elderly individuals, who benefit from health and pension spending, are also more supportive of redistribution. Interestingly, none of the social distance measures have a significant impact on a native's redistribution preference. Thus, natives' social distance or desire to avoid social relationships with immigrants has no influence on their support for redistribution.

However, this picture changes when the perceived outgroup threat measures are considered (see Table 4). Socioeconomic and demographic predictors take the same effect direction and similar effect size as above. Again, the frequency of interethnic contact reduces the probability of perceiving immigrants as a threat to tangible and non-tangible goods.¹ In contrast to the social distance measures, all outgroup threat measures have a significantly negative impact on natives' support for redistribution. This result emphasizes that natives' redistribution preference is rather driven by their vague fear of changes in the social environment and the economic consequences due to the presence of immigrants than by animosity towards particular immigrants. For one, the estimations confirm the predictions of intergroup contact theory, since more interethnic contact reduces natives' negative attitudes towards immigrants and lessens prejudices and stereotypes. Thus, living

¹ Full estimation results are found in Table 11 and Table 12.

Table 3: Impact of social distance measures on natives' support for redistribution

Native sample; coefficient estimates

	Mind Marriage to Relative		Mind Immigrant as Boss		Immigrant Friends	
	<i>support for redistribution</i>	<i>mind marriage to relative</i>	<i>support for redistribution</i>	<i>mind immigrant as boss</i>	<i>support for redistribution</i>	<i>immigrant friends</i>
age	0.0185 (0.0032)***	0.0188 (0.0038)***	0.0180 (0.0032)***	0.0143 (0.0038)***	0.0176 (0.0032)***	0.0103 (0.0039)***
age ²	-0.0001 (0.0000)***	-0.0001 (0.0000)**	-0.0001 (0.0000)***	-0.0001 (0.0000)	-0.0001 (0.0000)***	0.0000 (0.0000)
education years	-0.0201 (0.0028)***	-0.0273 (0.0029)***	-0.0197 (0.0027)***	-0.0294 (0.0029)***	-0.0189 (0.0026)***	-0.0329 (0.0029)***
female	0.0659 (0.0166)***	-0.0364 (0.0201)*	0.0688 (0.0165)***	0.0187 (0.0201)	0.0692 (0.0166)***	0.0684 (0.0201)***
employment type (<i>ref.: public sector</i>)						
private sector	-0.0973 (0.0187)***	0.0366 (0.0225)	-0.0978 (0.0187)***	0.0490 (0.0225)**	-0.0993 (0.0186)***	0.0427 (0.0225)*
self-employed	-0.1611 (0.0306)***	-0.0594 (0.0372)	-0.1586 (0.0306)***	-0.0099 (0.0372)	-0.1597 (0.0306)***	-0.0707 (0.0375)*
other	-0.1018 (0.0550)*	-0.0926 (0.0655)	-0.1011 (0.0550)*	-0.0997 (0.0654)	-0.0969 (0.0549)*	0.0138 (0.0668)
household income	-0.0675 (0.0039)***	-0.0151 (0.0046)***	-0.0672 (0.0038)***	-0.0136 (0.0046)***	-0.0668 (0.0038)***	-0.0104 (0.0046)**
household member	0.0404 (0.0105)***	0.0173 (0.0125)	0.0396 (0.0105)***	0.0069 (0.0125)	0.0393 (0.0105)***	0.0045 (0.0127)
kids at home	-0.0462 (0.0251)*	0.0024 (0.0303)	-0.0467 (0.0251)*	-0.0081 (0.0303)	-0.0467 (0.0251)*	-0.0103 (0.0305)
employment status (<i>ref.: not in labor force</i>)						
unemployed	0.1200 (0.0425)***	0.0028 (0.0502)	0.1200 (0.0425)***	0.0043 (0.0503)	0.1180 (0.0426)***	-0.1153 (0.0506)**
employed	-0.0187 (0.0242)	0.0494 (0.0295)*	-0.0196 (0.0242)	0.0379 (0.0295)	-0.0201 (0.0242)	0.0561 (0.0293)*
married	0.0087 (0.0200)	0.0739 (0.0237)***	0.0057 (0.0197)	0.0360 (0.0237)	0.0052 (0.0198)	0.0678 (0.0238)***
right-left scale	0.1165 (0.0059)***	-0.0838 (0.0046)***	0.1187 (0.0050)***	-0.0646 (0.0046)***	0.1213 (0.0039)***	-0.0206 (0.0046)***
(sub-)urban	-0.0160 (0.0189)	-0.0695 (0.0220)***	-0.0144 (0.0188)	-0.0775 (0.0220)***	-0.0134 (0.0193)	-0.1573 (0.0220)***
mind marriage with relative	-0.1713 (0.1347)					
mind immigrant as boss			-0.1250 (0.1223)			
immigrant friends					-0.0496 (0.0733)	
<i>interethnic contact</i>		-0.0784 (0.0055)***		-0.0816 (0.0055)***		-0.1743 (0.0055)***
$\text{atanh } \hat{\rho}$	0.0834 (0.0827)		0.0663 (0.0747)		0.0293 (0.0456)	
Obs.	18915		18915		18915	
AIC			67747		67751	
BIC	68352		68289		68293	
Log Likelihood			-33805		-33807	

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

Table 4: Impact of outgroup threat measures on natives' support for redistribution

Native sample; coefficient estimates

	Culture Undermined		Way of Life Worsens	
	<i>support for redistribution</i>	<i>culture undermined</i>	<i>support for redistribution</i>	<i>way of life worsens</i>
culture undermined	-0.5727 (0.1109)***			
way of life worsens			-0.8642 (0.0826)***	
interethnic contact		-0.0725 (0.0061)***		-0.0490 (0.0068)***
$\text{atanh } \hat{\rho}$	0.3181 (0.0731)***		0.4905 (0.0577)***	
Obs.	18989		18989	
AIC	64551		59472	
BIC	65109		60030	
Log Likelihood	-32205		-29665	

	Religious Beliefs Undermined		Immigrants Bad for Economy	
	<i>support for redistribution</i>	<i>religious beliefs undermined</i>	<i>support for redistribution</i>	<i>immigrants bad for economy</i>
religious beliefs undermined	-0.5409 (0.1377)***			
immigrants bad for economy			-0.5579 (0.1076)***	
interethnic contact		-0.0443 (0.0071)***		-0.0651 (0.0068)***
$\text{atanh } \hat{\rho}$	0.2638 (0.0788)***		0.3206 (0.0662)***	
Obs.	18989		18989	
AIC	58141		59936	
BIC	58699		60493	
Log Likelihood	-29000		-29897	

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects, socioeconomic and demographic predictors are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

in a more ethnically diverse neighborhood has a significantly positive influence on a native's attitudes towards immigrants. However, the predictions of conflict theory are also confirmed, since natives' concerns about intensified competition for intangible and tangible goods decrease their solidarity with immigrants and their support for redistribution simultaneously. Therefore, it is not natives' social distance from immigrants or their desire to avoid social contact with immigrants in their private life and in the workplace that echo with their sociopolitical calls. However, perceiving the presence of immigrants as a threat to ingroup norms and values and the country's economic stability and development lowers natives' support for redistribution significantly.

In the next step, I investigate how natives' attitudes towards different immigration policies affect their socio-political positions using the survey experiment included in the European Social Survey. The survey experiment contains four questions concerning natives' attitudes towards immigration policy. Since the wording of the policy questions differs about immigrants' continent of origin and their qualification, I define two new groups by different combinations of the underlying wording conditions. The first binary group indicator *non-European immigration* separates between policy questions about immigration from non-European and European countries. The second binary group indicator *skilled immigration*, however, separates between policy questions about immigration of skilled and unskilled immigrants. In the last estimation, I apply the original group indicator from the survey experiment. Again, all estimations include the same set of socioeconomic and demographic predictors as above. The empirical results show that natives who were randomly sur-

veyed about their attitudes towards immigration from non-European countries are more likely to oppose this immigration policy (see Table 5).² The same is true for natives who were asked about

Table 5: Impact of attitudes towards immigration policy on natives' support for redistribution
Native sample; coefficient estimates

	Immigration by Origin		Immigration by Skills		support for redistribution
	support for redistribution	immigration attitudes	support for redistribution	immigration attitudes	
immigration policy attitudes	-0.6416 (0.1014)***		-0.2074 (0.0888)**		-0.1727 (0.0854)**
non-European immigration		0.1891 (0.0225)***			
unskilled immigration				0.6365 (0.0242)***	
skilled non-European immigration					0.2143 (0.0295)***
unskilled European immigration					0.6452 (0.0327)***
unskilled non-European immigration					0.8505 (0.0350)***
interethnic contact		-0.0610 (0.0065)***		-0.0672 (0.0068)***	-0.0688 (0.0068)***
$\text{atanh } \hat{\rho}$		0.3620 (0.0652)***		0.1023 (0.0517)**	0.0820 (0.0497)*
Obs.		20029		20029	20029
AIC		63607		62957	62878
BIC		64176		63526	63463
Log Likelihood		-31731		-31406	-31365

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects, socioeconomic and demographic predictors are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

their attitudes towards unskilled immigration regardless of immigrants' continent of origin. Since both estimations use the same second outcome variable, a comparison between the coefficient estimates points out that the educational and economic dimension of immigration policy has a more substantial impact on natives' preferred level of immigration than the ethnic and cultural dimension. The last estimation, which employs the original group indicator of the survey experiment, confirms these results. Natives who were asked about skilled non-European immigration support less immigration than natives who were surveyed about skilled European immigration. However, this difference in support increases more strongly once I compare the base category of the group indicator with unskilled European immigration. Further, a native's rejection of a high level of immigration lowers their support for redistribution in all estimations significantly. However, this association only considers that natives who refuse a high level of immigration, regardless of immigration pattern, demand less redistribution. Thus it is not distinguishable whether the economic or ethnic dimension of immigration policy drive more strongly this effect. However, the random assignment of natives to the surveyed four groups enables the estimation of the indirect impact of random assignment on natives' support for redistribution. Finally, a native's interethnic contact reduces their opposition to a high level of immigration in all estimations.

² Full estimation results are found in Table 13.

6.1 Indirect and Direct Effects

The recursive bivariate probit estimation allows for the division of a predictor's marginal effect into a direct and an indirect effect. The direct effect measures the impact of a variable on a native's support for redistribution via a direct association. In contrast, the indirect effect identifies the influence of a variable on a native's support for redistribution through a change in their attitudes towards immigrants or immigration. The sum of both effects subsequently yields the overall effect of any predictor. Since the social distance measures yielded insignificant coefficient estimates, decompositions are applied to estimations using outgroup threat measures and natives' attitudes towards different immigration policies. The breakdown of the overall effect of an independent variable into its components enables us to investigate whether direct and indirect effects compensate for one another for some predictors (see Table 6). Concerning the cultural threat measure, another year of education reduces natives' probability of a high support for redistribution by 0.96 percent (direct effect). In comparison, the probability for support of a high redistribution simultaneously increases by 0.36 percent due to a reduced likelihood of perceived cultural threat (indirect effect). In total, the average marginal effect is -0.6 percent. The same overcompensating negative effect holds for a native's household income. Meanwhile, employees or former employees in the private sector show a lower probability, both indirectly and directly, of high support for redistribution than their counterparts in the public sector. However, the negative association is driven to a much greater extent by the direct effect. In contrast, both effects of political orientation operate in the same direction and strengthen one other. Examining perceived cultural threat, a stronger leftist political leaning on the ideological scale directly increases a native's support for redistribution by 3.25 percent and additionally by 0.46 percent through its negative impact on a native's perceived cultural threat. Ultimately, the average marginal effects of perceived culture threat and threat to the way of life on a native's support for redistribution are significant. Natives' concerns about the national cultural landscape reduce their support by almost 17 percent, and natives' anxiety about the deterioration of their way of life due to the presence of immigrants lowers their support by 22 percent.

There is another nice feature of this decomposition method. It allows us to evaluate the impact of a predictor, which only occurs in the second outcome equation, on natives' support for redistribution through a change in the second outcome variable, thus the outgroup threat measure. Our results show that a rise in natives' interethnic contact increases the probability of having a high support for redistribution by 0.4 and 0.3 percent for both measures the cultural threat and threat to the way of life. Thus a greater ethnic diversity increases through a positive change in natives' attitudes towards immigrants their support for redistribution. At first glance, this finding may challenge the previous results of the empirical literature, but it does not exclude the possibility of a negative effect of ethnic diversity at the country level. Whereas the association between ethnic diversity and the support for redistribution implies an unambiguous channel at the country level, the indirect effect of interethnic contact is merely transmitted through a change in a native's attitudes towards immigrants. The frequency of interethnic contact in daily life depends on the share of immigrants in the immediate environment. If immigrants are geographically unequally distributed across the country and the immigrant population gathers in a few agglomerations, the majority of

Table 6: Average marginal effects of outgroup threat measures on natives' support for redistribution (part 1)

Native sample; decomposition of average marginal effects

	Culture undermined			Way of Life Worsens		
	<i>direct effect</i>	<i>indirect effect</i>	<i>total effect</i>	<i>direct effect</i>	<i>indirect effect</i>	<i>total effect</i>
age	0.0007 (0.0002)***	0.0002 (0.0001)***	0.0009 (0.0002)***	0.0008 (0.0002)***	0.0001 (0.0001)	0.0009 (0.0002)***
education years	-0.0096 (0.0011)***	0.0036 (0.0008)***	-0.0060 (0.0007)***	-0.0086 (0.0008)***	0.0028 (0.0004)***	-0.0058 (0.0007)***
female	0.0193 (0.0052)***	0.0018 (0.0012)	0.0211 (0.0051)***	0.0233 (0.0053)***	-0.0028 (0.0016)*	0.0204 (0.0051)***
employment type (<i>ref.: public sector</i>)						
private sector	-0.0235 (0.0058)***	-0.0042 (0.0016)***	-0.0278 (0.0056)***	-0.0218 (0.0059)***	-0.0060 (0.0018)***	-0.0277 (0.0056)***
self-employed	-0.0567 (0.0100)***	0.0015 (0.0022)	-0.0552 (0.0098)***	-0.0585 (0.0102)***	0.0034 (0.0030)	-0.0551 (0.0099)***
other	-0.0369 (0.0181)**	0.0103 (0.0045)**	-0.0265 (0.0176)	-0.0360 (0.0183)**	0.0111 (0.0056)**	-0.0249 (0.0175)
household income	-0.0220 (0.0013)***	0.0017 (0.0004)***	-0.0203 (0.0012)***	-0.0222 (0.0012)***	0.0021 (0.0004)***	-0.0201 (0.0012)***
household member	0.0108 (0.0033)***	0.0004 (0.0007)	0.0112 (0.0032)***	0.0113 (0.0033)***	0.0000 (0.0009)	0.0113 (0.0032)***
kids at home	-0.0097 (0.0080)	-0.0031 (0.0018)*	-0.0128 (0.0078)	-0.0096 (0.0081)	-0.0038 (0.0023)	-0.0134 (0.0078)*
employment status (<i>ref.: not in labor force</i>)						
unemployed	0.0357 (0.0128)***	0.0047 (0.0031)	0.0404 (0.0125)***	0.0420 (0.0129)***	-0.0027 (0.0039)	0.0393 (0.0125)***
employed	-0.0064 (0.0077)	0.0034 (0.0019)*	-0.0029 (0.0075)	-0.0032 (0.0078)	0.0009 (0.0023)	-0.0023 (0.0075)
married	0.0058 (0.0062)	-0.0007 (0.0014)	0.0051 (0.0061)	0.0057 (0.0063)	-0.0015 (0.0018)	0.0043 (0.0061)
right-left scale	0.0325 (0.0015)***	0.0046 (0.0010)***	0.0371 (0.0012)***	0.0324 (0.0013)***	0.0052 (0.0007)***	0.0377 (0.0012)***
(sub-)urban	-0.0195 (0.0060)***	0.0067 (0.0019)***	-0.0128 (0.0056)**	-0.0190 (0.0059)***	0.0069 (0.0019)***	-0.0121 (0.0056)**
culture undermined	-0.1656 (0.0299)***					
way of life worsens				-0.2239 (0.0173)***		
<i>interethnic contact</i>		0.0039 (0.0008)***			0.0031 (0.0005)***	

Notes: Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

natives do not experience any interethnic contact. Thus, an ethnically more diverse country may show, *ceteris paribus*, a higher support for redistribution among natives, on average, than a country with less ethnic diversity if the immigrant population is geographically less evenly distributed across the latter than the former.

The next estimations using the remaining outgroup threat measures confirm the previous results so far (see Table 7).³ Natives' perceived religious and economic threat lower their probability of

Table 7: Average marginal effects of outgroup threat measures on natives' support for redistribution (part 2)

Native sample; decomposition of average marginal effects

	Religious Beliefs Undermined		Immigrants Bad for Economy	
	<i>direct effect</i>	<i>indirect effect</i>	<i>direct effect</i>	<i>indirect effect</i>
religious beliefs undermined	-0.1493 (0.0332)***			
immigrants bad for economy			-0.1553 (0.0265)***	
interethnic contact		0.0014 (0.0004)***		0.0026 (0.0006)***

Notes: Country fixed effects, socioeconomic and demographic predictors are included at every stage of estimation, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

a high support for redistribution by about 15 percent. Furthermore, in both estimations, more interethnic contact with immigrants increases a native's support for redistribution through a change in the respective outgroup threat measure. Next, the decomposition of average marginal effects is applied to estimations using natives' immigration policy attitudes as the second outcome variable. Natives' rejection of a high level of immigration lowers their support for redistribution significantly in all estimations by 5 to 17.5 percent (see Table 8).⁴ However, this association only considers that

Table 8: Average marginal effects of immigration policy attitudes on natives' support for redistribution

Native sample; decomposition of average marginal effects

	Immigration by Origin		Immigration by Skills		Immigration by Origin and Skills	
	<i>direct effect</i>	<i>indirect effect</i>	<i>direct effect</i>	<i>indirect effect</i>	<i>direct effect</i>	<i>indirect effect</i>
immigration policy attitudes	-0.1754 (0.0242)***		-0.0616 (0.0254)**		-0.0516 (0.0247)**	
non-European immigration		-0.0090 (0.0018)***				
unskilled immigration				-0.0087 (0.0038)**		
skilled non-European immigration						-0.0031 (0.0016)*
unskilled European immigration						-0.0079 (0.0040)**
unskilled non-European immigration						-0.0096 (0.0048)**
interethnic contact		0.0029 (0.0006)***		0.0009 (0.0004)**		0.0008 (0.0004)*

Notes: Country fixed effects, socioeconomic and demographic predictors are included at every stage of estimation, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

³ Full estimation results are found in Table 14

⁴ Full estimation results are found in Table 15 and Table 16

natives who refuse a high level of immigration, regardless of immigration pattern, demand less redistribution. This finding is remarkable since the second outcome variable pools all four survey groups which were questioned differently regarding the ethnic and skill dimensions of immigration policy. Thus, natives' general attitude towards any pattern of immigration is significantly mirrored in their support for redistribution.

More important, however, are the indirect effects of the generated and original group identifiers along the ethnic and skill dimensions of immigration policy. Thus, the question is whether natives' ethnic or skill preference in immigration policy affect their support for redistribution through a change in their opposition to a high inflow of immigrants. Since both group identifiers are based on random assignment of natives, the corresponding indirect effects are unbiased and have a causal interpretation. The estimates show that natives surveyed about their attitude towards non-European immigration are less likely to support a high level of redistribution than natives who were questioned about their attitude towards European immigration. This ethnic preference indicates that natives distinguish in their solidarity between Europeans and non-Europeans. In turn, this difference in solidarity changes natives' level of support for redistribution. Furthermore, natives surveyed about their attitude towards unskilled immigration are less likely to prefer a high level of redistribution than natives who were asked about their attitude towards skilled immigration. Thus, there is also a skill preference among natives regarding the immigration pattern. Since unskilled workers are more likely to receive social benefits and to be net recipients of governmental redistribution, the negative indirect effect shows that natives' welfare concerns about unskilled immigration shape their support for redistribution. Employing the original group indicator within the last estimation of the indirect effects reveals that natives' refusal of unskilled immigration has a more substantial impact on their support for a high redistribution than their rejection of non-European immigration. Natives who were surveyed about their attitude towards skilled non-European immigration show a lower probability of a high support for redistribution compared to natives who were surveyed about their attitude towards skilled European immigration by 0.3 percent. This marginal effect is even greater for natives who were surveyed about their attitude towards unskilled European immigration, indicating that the skill dimension of immigration is more important in shaping natives support for redistribution than the cultural dimension.

6.2 Selective Out-Migration

Previous results show that interethnic contact is positively related to all attitudinal measures. However, in order to detect the effect of interethnic contact on anti-immigrant and immigration attitudes of natives who are randomly assigned across regions with different immigrant population shares, the effect of interethnic contact must be measured before natives have chosen their permanent place of residence according to their attitudes. Since immigrants' choice of residence is not random and is mostly based on the location decision of previous generations of immigrants from the same country, as well as on the labor market condition in a region, the estimated effects

of interethnic contact could be biased by selective out-migration of natives (Card/DiNardo, 2000). The main issue is that the effect of interethnic contact on outgroup threats or immigration policy attitudes might be biased due to natives' self-selection. Natives who have negative attitudes avoid interaction and contact with immigrants during daily life and may leave their neighborhoods due to an inflow of immigrants in order to escape interethnic contact. In contrast, natives who have positive outgroup attitudes actively seek contact with immigrants and may stay in neighborhoods when the share of immigrants increases. In conclusion, there is reverse causality if natives' attitudes determine the frequency of their interethnic contact.⁵ I can address this endogeneity problem by using values of interethnic contact at higher levels of spatial aggregation as suitable instruments (Dustmann/Fabbri/Preston, 2011). Since interethnic contact in a given neighborhood depends on the presence of immigrants, the current ethnic diversity at a higher level of spatial aggregation is a valid instrument. Thus, the share of immigrants at the NUTS level 2, which is calculated based on the European Union Labour Force Survey, is used (European Commission, 2019a).⁶

The immigrant population shares vary widely across European countries as well as across NUTS level 2 regions within countries.⁷ The region with the highest share is the Lake Geneva Region (44 percent) in Switzerland, and the region with the lowest share is Lesser Poland Province (0.3 percent) in Poland. The countries of the former Eastern bloc have relatively low immigrant shares compared to Western European countries. Further, the immigrant population share is generally higher in urban agglomerations than in rural regions of the European countries. Overall, the variation in the immigrant population shares across NUTS level 2 regions is sufficient for their use as an instrumental variable for natives' interethnic contact in daily life.

Here, the key idea is that natives who have negative outgroup attitudes will leave their neighborhoods due to an increase in the number of immigrants, whereby they are more likely to migrate to areas that are relatively close in distance and have fewer immigrants, e.g., from cities to rural areas nearby, than to regions that are far away. A possible reason for restricted mobility out of a given geographical region could be the desire to remain in proximity to family, friends, and workplace. Dustmann/Preston (2001) show that such instruments reduce the bias induced by natives' self-sorting. I add the instrumenting equation with interethnic contact as a continuous dependent variable to our previous recursive bivariate probit model:

$$\begin{aligned} y_1^* &= x_1' \beta_1 + \gamma \cdot y_2 + \epsilon_1, & y_1 &= m \quad \text{if } \kappa_{m-1} \leq y_1^* < \kappa_m \quad \text{for } m = 1, \dots, 4, \\ y_2^* &= x_2' \beta_2 + \delta \cdot \psi + \epsilon_2, & y_2 &= 1 \quad \text{if } y_2^* > 0, \text{ 0 otherwise,} \\ \psi &= x_3' \beta_3 + \theta \cdot \text{impop} + \epsilon_3, \end{aligned}$$

where the errors ϵ_1 , ϵ_2 and ϵ_3 are jointly normally distributed and may correlate, which is mirrored

⁵ In most empirical studies, reverse causality is less pronounced (Powers/Ellison, 1995; Pettigrew/Tropp, 2006).

⁶ Respondents were defined as immigrants or foreign-born if they were not born in the respective country regardless of their parents' place of birth. Alternative definitions of migration background yielded similar estimation results. For the estimations, the log of immigrant population share is used to mitigate the effect of outlier values.

⁷ Germany and the Netherlands are excluded from estimations since these countries have no data on respondents' country of birth. For Austria and the United Kingdom, the calculations based on NUTS level 1 regions.

in the significance of the coefficients of correlation ρ_{12} , ρ_{13} and ρ_{23} . y_1^* and y_2^* are the latent endogenous variables of natives' support for redistribution and perceived outgroup threats or immigration policy attitudes, respectively, and ψ is the endogenous variable of natives' interethnic contact. I instrument the latter with the immigrant population share at the NUTS level 2 (*impop*). Finally, all equations contain the full set of socioeconomic and demographic predictors $x_1 = x_2 = x_3$. In order to obtain consistent and efficient estimates, full information maximum likelihood is applied. Since the fully observed recursive probit model contains the simultaneous estimation of three equations, a modification of the Geweke-Hajivassiliou-Keane algorithm is implemented to compute higher-dimensional cumulative normal distributions (Geweke, 1989; Hajivassiliou/McFadden, 1998; Keane, 1994).⁸

I repeated the recursive estimations for outgroup and immigration policy measures using our instrumentation approach (see Table 21 and Table 22 in Appendix). The coefficient estimates of outgroup threat and immigration policy measures are similar in magnitude and significance to previous results. However, the coefficient estimates of natives' interethnic contact are greater due to the application of the instrument variable in all estimations. This finding can be traced to the fact that the correlation coefficient (ρ_{23}) is significant for all three outgroup threat measures. Thus the possibility of endogeneity due to selective out-migration cannot be ruled out. Since there is no significant correlation (ρ_{13}) between the instrumenting equation and the first outcome equation in all estimations, the calculation of marginal effects can be carried out independently of the instrumenting equation. The direct effects of outgroup threat measures are in magnitude similar to previous results and range between 15.5 and 22.4 percent (see Table 9). Controlling for selective

Table 9: Average marginal effects of outgroup threats on natives' support for redistribution, controlling for selective out-migration

Native sample; decomposition of average marginal effects

	Culture Undermined		Way of Life Worsens		Religious Beliefs Undermined		Immigrants Bad for Economy	
	direct effect	indirect effect	direct effect	indirect effect	direct effect	indirect effect	direct effect	indirect effect
culture undermined	-0.1858 (0.0291)***							
way of life worsens			-0.2357 (0.0161)***					
religious beliefs undermined					-0.1549 (0.0344)***			
immigrants bad for economy							-0.2002 (0.0213)***	
interethnic contact		0.0148 (0.0040)***		0.0158 (0.0047)***		0.0079 (0.0036)**		0.0149 (0.0040)***

Notes: Country fixed effects, socioeconomic and demographic predictors are included at every stage of estimation, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

out-migration nearly doubles the indirect effect of ethnic diversity in the neighborhood on natives'

⁸ See Roodman (2011) for a detailed explanation about the advantages and disadvantages of the modified Geweke-Hajivassiliou-Keane algorithm.

redistribution preference. A higher interethnic contact increases natives' support for redistribution by 1.6 to 0.8 percent through a change in natives' perception of immigrants as a threat to intangible and tangible goods. Calculations of the average marginal effect of the immigration policy measures show that both group identifiers and natives' attitudes towards immigration policy have a similar effect in magnitude on their support for redistribution to previous results. The indirect effects of group identifiers range between 0.5 and 1 percent (see Table 10). Still, natives' concerns about wel-

Table 10: Average marginal effects of immigration policy attitudes on natives' support for redistribution, controlling for selective out-migration

Native sample; decomposition of average marginal effects

	Immigration by Origin		Immigration by Skills		Immigration by Origin and Skills	
	<i>direct effect</i>	<i>indirect effect</i>	<i>direct effect</i>	<i>indirect effect</i>	<i>direct effect</i>	<i>indirect effect</i>
immigration policy attitudes	-0.1954 (0.0213)***		-0.0837 (0.0283)***		-0.0806 (0.0273)***	
non-European immigration		-0.0098 (0.0018)***				
unskilled immigration				-0.0108 (0.0039)***		
skilled non-European immigration						-0.0046 (0.0018)***
unskilled European immigration						-0.0114 (0.0041)***
unskilled non-European immigration						-0.0139 (0.0050)***
interethnic contact		0.0100 (0.0038)***		0.0035 (0.0019)*		0.0036 (0.0019)*

Notes: Country fixed effects, socioeconomic and demographic predictors are included at every stage of estimation, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

fare effects due to unskilled immigration shape their support for redistribution more strongly than their concerns about immigrants' country of origin. Thus, the economic dimension of immigration surpasses the cultural dimension of immigration. Controlling for selective out-migration, however, decreases the indirect effect of interethnic contact on natives' support for redistribution.

7 Conclusion

Ethnic diversity plays a crucial role in shaping national economic and social policy. It changes the social environment of a country and may challenge essential societal values, such as trust and solidarity. The empirical results show that more contact with members of other ethnic groups in daily life is positively related to more open attitudes of natives towards immigrants. More social interaction and personal experience of ethnic diversity reduce natives' prejudices and stereotypes. In turn, an open-minded and tolerant attitude promotes natives' general solidarity. Since solidarity with fellow residents is an essential driver of an individual's support for redistribution, I argue that there is no direct, but an indirect impact of ethnic diversity on natives' support for redistribution through a change in their perceptions of immigrants. By applying recursive bivariate probit estimations, I can decompose the predictors' marginal effects on natives' support for redistribution into a direct effect and an indirect effect that works through a change in natives' attitudes towards immigrants. Our results reveal that perception of immigrants as a threat to societal value or country's economy decrease natives' support for redistribution substantially by 15 to 22 percent. The same is true for more vigorous opposition to immigration. However, natives' desire for social distance to immigrants in daily life does not affect their demand for redistribution. Thus, natives' vague fears and concerns about a more intense competition on tangible and intangible goods with other ethnic groups are decisive in the formation of their socio-political attitudes, but not their desire for social distance in everyday life. Further, living in more ethnically diverse neighborhoods increase natives' support for redistribution by 0.4 to 1.5 percent through a promotion of pro-immigrant attitudes and stronger solidarity with fellow residents.

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Appendix

Table 11: Impact of outgroup threat measures on natives' support for redistribution (part 1) - full table
Native sample; coefficient estimates

	Culture Undermined		Way of Life Worsens	
	<i>support for redistribution</i>	<i>culture undermined</i>	<i>support for redistribution</i>	<i>way of life worsens</i>
age	0.0111 (0.0032)***	-0.0122 (0.0042)***	0.0119 (0.0031)***	-0.0076 (0.0048)
age ²	-0.0001 (0.0000)***	0.0001 (0.0000)*	-0.0001 (0.0000)***	0.0001 (0.0000)
education years	-0.0303 (0.0033)***	-0.0673 (0.0031)***	-0.0266 (0.0025)***	-0.0439 (0.0034)***
female	0.0608 (0.0165)***	-0.0339 (0.0215)	0.0721 (0.0164)***	0.0454 (0.0243)*
employment type (<i>ref.: public sector</i>)				
private sector	-0.0751 (0.0188)***	0.0794 (0.0238)***	-0.0682 (0.0186)***	0.0951 (0.0269)***
self-employed	-0.1766 (0.0307)***	-0.0271 (0.0396)	-0.1785 (0.0305)***	-0.0513 (0.0445)
other	-0.1164 (0.0558)**	-0.1847 (0.0688)***	-0.1115 (0.0554)**	-0.1605 (0.0750)**
household income	-0.0695 (0.0038)***	-0.0324 (0.0049)***	-0.0688 (0.0038)***	-0.0332 (0.0055)***
household member	0.0341 (0.0104)***	-0.0077 (0.0134)	0.0349 (0.0104)***	-0.0007 (0.0150)
kids at home	-0.0306 (0.0251)	0.0576 (0.0326)*	-0.0297 (0.0250)	0.0612 (0.0370)*
employment status (<i>ref.: not in labor force</i>)				
unemployed	0.1164 (0.0427)***	-0.0878 (0.0552)	0.1344 (0.0424)***	0.0437 (0.0648)
employed	-0.0200 (0.0243)	-0.0643 (0.0318)**	-0.0100 (0.0240)	-0.0145 (0.0362)
married	0.0182 (0.0195)	0.0127 (0.0255)	0.0177 (0.0194)	0.0235 (0.0289)
right-left scale	0.1026 (0.0057)***	-0.0869 (0.0050)***	0.1004 (0.0046)***	-0.0837 (0.0056)***
(sub-)urban	-0.0612 (0.0187)***	-0.1243 (0.0232)***	-0.0585 (0.0179)***	-0.1077 (0.0259)***
culture undermined	-0.5727 (0.1109)***			
way of life worsens			-0.8642 (0.0826)***	
interethnic contact		-0.0725 (0.0061)***		-0.0490 (0.0068)***
$\text{atanh } \hat{\rho}$	0.3181 (0.0731)***		0.4905 (0.0577)***	
Obs.	18989		18989	
AIC	64551		59472	
BIC	65109		60030	
Log Likelihood	-32205		-29665	

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

Table 12: Impact of outgroup threat measures on natives' support for redistribution (part 2) - full table
Native sample; coefficient estimates

	Religious Beliefs Undermined		Immigrants Bad for Economy	
	<i>support for redistribution</i>	<i>religious beliefs undermined</i>	<i>support for redistribution</i>	<i>immigrants bad for economy</i>
age	0.0133 (0.0032)***	-0.0025 (0.0050)	0.0128 (0.0032)***	-0.0027 (0.0047)
age ²	-0.0001 (0.0000)***	0.0000 (0.0000)	-0.0001 (0.0000)***	0.0000 (0.0000)
education years	-0.0220 (0.0026)***	-0.0348 (0.0036)***	-0.0251 (0.0027)***	-0.0524 (0.0034)***
female	0.0633 (0.0165)***	-0.0310 (0.0255)	0.0931 (0.0171)***	0.2151 (0.0243)***
employment type (<i>ref.: public sector</i>)				
private sector	-0.0817 (0.0187)***	0.0897 (0.0282)***	-0.0832 (0.0185)***	0.0550 (0.0268)**
self-employed	-0.1746 (0.0307)***	0.0184 (0.0475)	-0.1832 (0.0306)***	-0.0584 (0.0444)
other	-0.0948 (0.0556)*	-0.0791 (0.0798)	-0.0980 (0.0556)*	-0.1008 (0.0771)
household income	-0.0648 (0.0038)***	-0.0060 (0.0058)	-0.0685 (0.0038)***	-0.0355 (0.0055)***
household member	0.0325 (0.0104)***	-0.0249 (0.0154)	0.0356 (0.0104)***	0.0005 (0.0150)
kids at home	-0.0306 (0.0252)	0.0891 (0.0382)**	-0.0358 (0.0251)	0.0435 (0.0368)
employment status (<i>ref.: not in labor force</i>)				
unemployed	0.1314 (0.0426)***	-0.0075 (0.0653)	0.1253 (0.0426)***	-0.0498 (0.0636)
employed	-0.0103 (0.0242)	-0.0373 (0.0382)	-0.0081 (0.0241)	-0.0121 (0.0361)
married	0.0174 (0.0195)	0.0307 (0.0301)	0.0166 (0.0195)	0.0079 (0.0286)
right-left scale	0.1123 (0.0046)***	-0.0629 (0.0059)***	0.1110 (0.0045)***	-0.0579 (0.0056)***
(sub-)urban	-0.0411 (0.0180)**	-0.0595 (0.0274)**	-0.0508 (0.0182)***	-0.1111 (0.0257)***
religious beliefs undermined	-0.5409 (0.1377)***			
immigrants bad for economy			-0.5579 (0.1076)***	
interethnic contact		-0.0443 (0.0071)***		-0.0651 (0.0068)***
atanh $\hat{\rho}$	0.2638 (0.0788)***		0.3206 (0.0662)***	
Obs.	18989		18989	
AIC	58141		59936	
BIC	58699		60493	
Log Likelihood	-29000		-29897	

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

Table 13: Impact of attitudes towards immigration policy on natives' support for redistribution - full table
Native sample; coefficient estimates

	Immigration by Origin		Immigration by Skills		Immigration by Origin & Skills	
	support for redistribution	immigration attitudes	support for redistribution	immigration attitudes	support for redistribution	immigration attitudes
age	0.0159 (0.0030)***	0.0034 (0.0044)	0.0161 (0.0030)***	0.0027 (0.0046)	0.0161 (0.0030)***	0.0032 (0.0046)
age ²	-0.0001 (0.0000)***	-0.0001 (0.0000)	-0.0001 (0.0000)***	0.0000 (0.0000)	-0.0001 (0.0000)***	0.0000 (0.0000)
education years	-0.0272 (0.0027)***	-0.0560 (0.0033)***	-0.0216 (0.0026)***	-0.0582 (0.0034)***	-0.0211 (0.0026)***	-0.0588 (0.0034)***
female	0.0715 (0.0160)***	0.0528 (0.0232)**	0.0679 (0.0161)***	0.0696 (0.0239)***	0.0675 (0.0161)***	0.0684 (0.0240)***
employment type (ref.: public sector)						
private sector	-0.0807 (0.0182)***	0.0744 (0.0257)***	-0.0918 (0.0181)***	0.0843 (0.0264)***	-0.0926 (0.0181)***	0.0859 (0.0265)***
self-employed	-0.1669 (0.0297)***	-0.0309 (0.0431)	-0.1690 (0.0298)***	-0.0371 (0.0442)	-0.1690 (0.0298)***	-0.0406 (0.0443)
other	-0.1045 (0.0537)*	-0.0605 (0.0740)	-0.1013 (0.0539)*	-0.0534 (0.0765)	-0.1009 (0.0539)*	-0.0553 (0.0766)
household income	-0.0673 (0.0037)***	-0.0295 (0.0053)***	-0.0656 (0.0037)***	-0.0295 (0.0054)***	-0.0654 (0.0037)***	-0.0297 (0.0054)***
household member	0.0337 (0.0101)***	-0.0042 (0.0144)	0.0343 (0.0101)***	0.0022 (0.0148)	0.0343 (0.0101)***	0.0042 (0.0149)
kids at home	-0.0453 (0.0243)*	0.0181 (0.0352)	-0.0471 (0.0244)*	0.0073 (0.0361)	-0.0472 (0.0244)*	0.0032 (0.0362)
employment status (ref.: not in labor force)						
unemployed	0.1144 (0.0415)***	-0.0508 (0.0597)	0.1232 (0.0416)***	-0.0341 (0.0614)	0.1237 (0.0416)***	-0.0391 (0.0616)
employed	-0.0161 (0.0235)	0.0502 (0.0345)	-0.0193 (0.0235)	0.0709 (0.0355)**	-0.0195 (0.0236)	0.0674 (0.0356)*
married	0.0198 (0.0190)	0.0669 (0.0274)**	0.0129 (0.0191)	0.0510 (0.0282)*	0.0124 (0.0191)	0.0517 (0.0283)*
right-left scale	0.1047 (0.0047)***	-0.0791 (0.0055)***	0.1150 (0.0042)***	-0.0804 (0.0056)***	0.1157 (0.0041)***	-0.0801 (0.0056)***
(sub-)urban	-0.0540 (0.0177)***	-0.0891 (0.0248)***	-0.0404 (0.0177)**	-0.0952 (0.0255)***	-0.0393 (0.0177)**	-0.0934 (0.0255)***
immigration policy attitudes	-0.6416 (0.1014)***		-0.2074 (0.0888)**		-0.1727 (0.0854)**	
non-European immigration		0.1891 (0.0225)***				
unskilled immigration				0.6365 (0.0242)***		
skilled non-European immigration						0.2143 (0.0295)***
unskilled European immigration						0.6452 (0.0327)***
unskilled non-European immigration						0.8505 (0.0350)***
interethnic contact		-0.0610 (0.0065)***		-0.0672 (0.0068)***		-0.0688 (0.0068)***
$\tanh \hat{\rho}$	0.3620 (0.0652)***		0.1023 (0.0517)**		0.0820 (0.0497)*	
Obs.	20029		20029		20029	
AIC	63607		62957		62878	
BIC	64176		63526		63463	
Log Likelihood	-31731		-31406		-31365	

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\tanh \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

Table 14: Average marginal effects of outgroup threat measures on natives' support for redistribution (part 2) - full table

Native sample; decomposition of average marginal effects

	Religious Beliefs Undermined			Immigrants Bad for Economy		
	<i>direct effect</i>	<i>indirect effect</i>	<i>total effect</i>	<i>direct effect</i>	<i>indirect effect</i>	<i>total effect</i>
age	0.0009 (0.0002)***	-0.0001 (0.0000)	0.0009 (0.0002)***	0.0007 (0.0002)***	0.0002 (0.0001)***	0.0009 (0.0002)***
education years	-0.0069 (0.0008)***	0.0011 (0.0003)***	-0.0058 (0.0007)***	-0.0079 (0.0009)***	0.0021 (0.0005)***	-0.0058 (0.0007)***
female	0.0198 (0.0052)***	0.0010 (0.0009)	0.0208 (0.0051)***	0.0294 (0.0055)***	-0.0085 (0.0020)***	0.0209 (0.0051)***
employment type (<i>ref.: public sector</i>)						
private sector	-0.0253 (0.0057)***	-0.0029 (0.0012)**	-0.0282 (0.0056)***	-0.0260 (0.0057)***	-0.0022 (0.0012)*	-0.0281 (0.0056)***
self-employed	-0.0553 (0.0099)***	-0.0006 (0.0016)	-0.0559 (0.0098)***	-0.0585 (0.0100)***	0.0024 (0.0019)	-0.0561 (0.0098)***
other	-0.0295 (0.0176)*	0.0027 (0.0030)	-0.0267 (0.0174)	-0.0307 (0.0178)*	0.0042 (0.0035)	-0.0265 (0.0174)
household income	-0.0203 (0.0012)***	0.0002 (0.0002)	-0.0201 (0.0012)***	-0.0216 (0.0012)***	0.0014 (0.0004)***	-0.0202 (0.0012)***
household member	0.0102 (0.0033)***	0.0008 (0.0005)	0.0110 (0.0032)***	0.0112 (0.0033)***	0.0000 (0.0006)	0.0112 (0.0032)***
kids at home	-0.0096 (0.0079)	-0.0028 (0.0014)**	-0.0124 (0.0078)	-0.0113 (0.0079)	-0.0017 (0.0015)	-0.0130 (0.0078)*
employment status (<i>ref.: not in labor force</i>)						
unemployed	0.0398 (0.0126)***	0.0002 (0.0020)	0.0400 (0.0125)***	0.0383 (0.0127)***	0.0020 (0.0026)	0.0403 (0.0125)***
employed	-0.0032 (0.0076)	0.0012 (0.0012)	-0.0021 (0.0075)	-0.0025 (0.0076)	0.0005 (0.0014)	-0.0021 (0.0075)
married	0.0054 (0.0061)	-0.0010 (0.0010)	0.0045 (0.0060)	0.0052 (0.0062)	-0.0003 (0.0011)	0.0049 (0.0061)
right-left scale	0.0351 (0.0013)***	0.0020 (0.0006)***	0.0371 (0.0012)***	0.0350 (0.0013)***	0.0023 (0.0006)***	0.0373 (0.0012)***
(sub-)urban	-0.0129 (0.0057)**	0.0019 (0.0010)*	-0.0110 (0.0056)**	-0.0161 (0.0058)***	0.0045 (0.0014)***	-0.0116 (0.0056)**
religious beliefs undermined	-0.1493 (0.0332)***					
immigrants bad for economy				-0.1553 (0.0265)***		
interethnic contact		0.0014 (0.0004)***			0.0026 (0.0006)***	

Notes: Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

Table 15: Average marginal effects of immigration attitudes by origin and by skills on natives' support for redistribution - full table

Native sample; decomposition of average marginal effects

	Immigration by Origin			Immigration by Skills		
	<i>direct effect</i>	<i>indirect effect</i>	<i>total effect</i>	<i>direct effect</i>	<i>indirect effect</i>	<i>total effect</i>
age	0.0006 (0.0002)***	0.0001 (0.0001)*	0.0007 (0.0002)***	0.0006 (0.0002)***	0.0000 (0.0000)	0.0007 (0.0002)***
education years	-0.0086 (0.0009)***	0.0027 (0.0005)***	-0.0059 (0.0007)***	-0.0067 (0.0008)***	0.0008 (0.0004)**	-0.0059 (0.0007)***
female	0.0226 (0.0051)***	-0.0025 (0.0012)**	0.0201 (0.0050)***	0.0210 (0.0050)***	-0.0010 (0.0005)*	0.0200 (0.0050)***
<i>employment type (ref.: public sector)</i>						
private sector	-0.0252 (0.0056)***	-0.0035 (0.0014)***	-0.0288 (0.0055)***	-0.0280 (0.0055)***	-0.0012 (0.0006)*	-0.0292 (0.0055)***
self-employed	-0.0533 (0.0097)***	0.0015 (0.0022)	-0.0517 (0.0095)***	-0.0525 (0.0095)***	0.0005 (0.0007)	-0.0520 (0.0094)***
other	-0.0329 (0.0172)*	0.0030 (0.0038)	-0.0298 (0.0169)*	-0.0310 (0.0168)*	0.0008 (0.0012)	-0.0302 (0.0168)*
household income	-0.0213 (0.0012)***	0.0014 (0.0004)***	-0.0199 (0.0011)***	-0.0202 (0.0011)***	0.0004 (0.0002)**	-0.0198 (0.0011)***
household member	0.0106 (0.0032)***	0.0002 (0.0007)	0.0108 (0.0031)***	0.0106 (0.0031)***	0.0000 (0.0002)	0.0106 (0.0031)***
kids at home	-0.0144 (0.0077)*	-0.0009 (0.0017)	-0.0152 (0.0076)**	-0.0146 (0.0076)*	-0.0001 (0.0005)	-0.0147 (0.0076)*
<i>employment status (ref.: not in labor force)</i>						
unemployed	0.0351 (0.0124)***	0.0025 (0.0030)	0.0376 (0.0122)***	0.0368 (0.0122)***	0.0005 (0.0009)	0.0373 (0.0121)***
employed	-0.0051 (0.0074)	-0.0024 (0.0017)	-0.0075 (0.0073)	-0.0060 (0.0073)	-0.0010 (0.0006)	-0.0069 (0.0073)
married	0.0063 (0.0060)	-0.0032 (0.0014)**	0.0031 (0.0059)	0.0040 (0.0059)	-0.0007 (0.0005)	0.0033 (0.0059)
right-left scale	0.0331 (0.0013)***	0.0038 (0.0008)***	0.0368 (0.0011)***	0.0355 (0.0012)***	0.0011 (0.0005)**	0.0366 (0.0011)***
(sub-)urban	-0.0171 (0.0057)***	0.0043 (0.0014)***	-0.0128 (0.0054)**	-0.0125 (0.0055)**	0.0013 (0.0007)*	-0.0112 (0.0054)**
immigration policy attitudes	-0.1754 (0.0242)***			-0.0616 (0.0254)**		
non-European immigration		-0.0090 (0.0018)***				
unskilled immigration					-0.0087 (0.0038)**	
interethnic contact		0.0029 (0.0006)***			0.0009 (0.0004)**	

Notes: Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

Table 16: Average marginal effects of immigration attitudes by origin and skills on natives' support for redistribution - full table

Native sample; decomposition of average marginal effects

	Immigration by Origin and Skills		
	<i>direct effect</i>	<i>indirect effect</i>	<i>total effect</i>
age	0.0006 (0.0002)***	0.0000 (0.0000)	0.0007 (0.0002)***
education years	-0.0065 (0.0008)***	0.0007 (0.0003)**	-0.0059 (0.0007)***
female	0.0208 (0.0050)***	-0.0008 (0.0005)*	0.0201 (0.0050)***
employment type (<i>ref.: public sector</i>)			
private sector	-0.0283 (0.0055)***	-0.0010 (0.0006)*	-0.0292 (0.0055)***
self-employed	-0.0525 (0.0095)***	0.0005 (0.0006)	-0.0520 (0.0094)***
other	-0.0309 (0.0168)*	0.0007 (0.0010)	-0.0302 (0.0168)*
household income	-0.0202 (0.0011)***	0.0003 (0.0002)*	-0.0198 (0.0011)***
household member	0.0106 (0.0031)***	0.0000 (0.0002)	0.0105 (0.0031)***
kids at home	-0.0146 (0.0076)*	0.0000 (0.0004)	-0.0146 (0.0076)*
employment status (<i>ref.: not in labor force</i>)			
unemployed	0.0369 (0.0122)***	0.0005 (0.0008)	0.0374 (0.0121)***
employed	-0.0060 (0.0073)	-0.0008 (0.0006)	-0.0068 (0.0073)
married	0.0038 (0.0059)	-0.0006 (0.0004)	0.0032 (0.0059)
right-left scale	0.0357 (0.0012)***	0.0009 (0.0005)*	0.0366 (0.0011)***
(sub-)urban	-0.0122 (0.0055)**	0.0011 (0.0006)*	-0.0111 (0.0054)**
immigration policy attitudes	-0.0516 (0.0247)**		
skilled non-European immigration		-0.0031 (0.0016)*	
unskilled European immigration		-0.0079 (0.0040)**	
unskilled non-European immigration		-0.0096 (0.0048)**	
interethnic contact		0.0008 (0.0004)*	

Notes: Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015; own calculations. ©IAB

Table 17: Impact of outgroup threats on natives' support for redistribution, controlling for selective out-migration (part 1) - full table
Native sample; coefficient estimates

	Culture Undermined			Way of Life Worsens		
	<i>support for redistribution</i>	<i>culture undermined</i>	<i>interethnic contact</i>	<i>support for redistribution</i>	<i>way of life worsens</i>	<i>interethnic contact</i>
age	0.0111 (0.0035)***	-0.0047 (0.0048)	0.0229 (0.0056)***	0.0112 (0.0035)***	-0.0054 (0.0054)	0.0229 (0.0056)***
age ²	-0.0001 (0.0000)***	0.0000 (0.0001)	-0.0004 (0.0001)***	-0.0001 (0.0000)***	0.0000 (0.0001)	-0.0004 (0.0001)***
education years	-0.0339 (0.0035)***	-0.0547 (0.0058)***	0.0382 (0.0042)***	-0.0300 (0.0027)***	-0.0364 (0.0057)***	0.0382 (0.0042)***
female	0.0679 (0.0182)***	-0.0144 (0.0234)	0.0324 (0.0294)	0.0783 (0.0181)***	0.0532 (0.0260)**	0.0324 (0.0294)
employment type (<i>ref.: public sector</i>)						
private sector	-0.0786 (0.0208)***	0.0841 (0.0263)***	-0.0490 (0.0329)	-0.0735 (0.0204)***	0.0891 (0.0293)***	-0.0490 (0.0329)
self-employed	-0.1575 (0.0338)***	-0.0630 (0.0454)	-0.2919 (0.0548)***	-0.1614 (0.0336)***	-0.0904 (0.0501)*	-0.2919 (0.0548)***
other	-0.1320 (0.0640)**	-0.2692 (0.0766)***	-0.0174 (0.1027)	-0.1193 (0.0632)*	-0.2045 (0.0820)**	-0.0174 (0.1027)
household income	-0.0646 (0.0042)***	-0.0150 (0.0064)**	0.0423 (0.0068)***	-0.0633 (0.0042)***	-0.0144 (0.0071)**	0.0423 (0.0068)***
household member	0.0302 (0.0114)***	-0.0161 (0.0143)	-0.0206 (0.0185)	0.0297 (0.0113)***	-0.0169 (0.0159)	-0.0206 (0.0185)
kids at home	-0.0194 (0.0275)	0.0562 (0.0351)	-0.0232 (0.0446)	-0.0147 (0.0274)	0.0889 (0.0397)**	-0.0232 (0.0446)
employment status (<i>ref.: not in labor force</i>)						
unemployed	0.1238 (0.0466)***	-0.0714 (0.0591)	0.0330 (0.0740)	0.1477 (0.0463)***	0.0733 (0.0685)	0.0330 (0.0740)
employed	-0.0055 (0.0271)	-0.0074 (0.0435)	0.4023 (0.0435)***	0.0098 (0.0267)	0.0591 (0.0466)	0.4023 (0.0435)***
married	0.0169 (0.0213)	-0.0542 (0.0294)*	-0.1894 (0.0346)***	0.0171 (0.0213)	-0.0404 (0.0331)	-0.1894 (0.0346)***
right-left scale	0.0968 (0.0059)***	-0.0712 (0.0075)***	0.0403 (0.0066)***	0.0952 (0.0048)***	-0.0697 (0.0082)***	0.0403 (0.0066)***
(sub-)urban	-0.0664 (0.0204)***	0.0200 (0.0524)	0.6162 (0.0330)***	-0.0630 (0.0197)***	0.0297 (0.0578)	0.6162 (0.0330)***
culture undermined	-0.6649 (0.1136)***					
way of life worsens				-0.9485 (0.0819)***		
interethnic contact		-0.2562 (0.0554)***			-0.2322 (0.0623)***	
foreign-born population share			4.7879 (0.4264)***			4.7896 (0.4264)***
$\text{atanh } \hat{\rho}_{12}$		0.3218 (0.0643)***			0.4638 (0.0466)***	
$\text{atanh } \hat{\rho}_{13}$		-0.0089 (0.0097)			-0.0038 (0.0089)	
$\text{atanh } \hat{\rho}_{23}$		0.3369 (0.1037)***			0.3261 (0.1148)***	
Obs.		15695			15695	
AIC		115529			111582	
BIC		116310			112364	
Log Likelihood		-57662			-55689	

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015, European Union Labour Force Survey; own calculations. ©IAB

Table 18: Impact of outgroup threats on natives' support for redistribution, controlling for selective out-migration (part 2) - full table
Native sample; coefficient estimates

	Religious Beliefs Undermined			Immigrants Bad for Economy		
	<i>support for redistribution</i>	<i>religious beliefs undermined</i>	<i>interethnic contact</i>	<i>support for redistribution</i>	<i>immigrants bad for economy</i>	<i>interethnic contact</i>
age	0.0133 (0.0035)***	0.0037 (0.0055)	0.0229 (0.0056)***	0.0126 (0.0035)***	0.0037 (0.0051)	0.0229 (0.0056)***
age ²	-0.0001 (0.0000)***	-0.0001 (0.0001)	-0.0004 (0.0001)***	-0.0001 (0.0000)***	-0.0001 (0.0001)**	-0.0004 (0.0001)***
education years	-0.0242 (0.0028)***	-0.0237 (0.0057)***	0.0382 (0.0042)***	-0.0294 (0.0029)***	-0.0394 (0.0059)***	0.0382 (0.0042)***
female	0.0716 (0.0182)***	-0.0053 (0.0273)	0.0324 (0.0294)	0.1032 (0.0184)***	0.1784 (0.0263)***	0.0324 (0.0294)
employment type (<i>ref.: public sector</i>)						
private sector	-0.0883 (0.0207)***	0.0983 (0.0308)***	-0.0490 (0.0329)	-0.0888 (0.0204)***	0.0416 (0.0287)	-0.0490 (0.0329)
self-employed	-0.1604 (0.0339)***	-0.0393 (0.0540)	-0.2919 (0.0548)***	-0.1670 (0.0337)***	-0.1044 (0.0492)**	-0.2919 (0.0548)***
other	-0.0859 (0.0636)	-0.0813 (0.0873)	-0.0174 (0.1027)	-0.0974 (0.0633)	-0.1300 (0.0836)	-0.0174 (0.1027)
household income	-0.0601 (0.0042)***	0.0075 (0.0071)	0.0423 (0.0068)***	-0.0634 (0.0042)***	-0.0122 (0.0070)*	0.0423 (0.0068)***
household member	0.0297 (0.0114)***	-0.0276 (0.0163)*	-0.0206 (0.0185)	0.0320 (0.0113)***	-0.0094 (0.0159)	-0.0206 (0.0185)
kids at home	-0.0230 (0.0276)	0.0736 (0.0408)*	-0.0232 (0.0446)	-0.0235 (0.0274)	0.0511 (0.0391)	-0.0232 (0.0446)
employment status (<i>ref.: not in labor force</i>)						
unemployed	0.1393 (0.0466)***	-0.0064 (0.0683)	0.0330 (0.0740)	0.1355 (0.0464)***	-0.0076 (0.0664)	0.0330 (0.0740)
employed	0.0098 (0.0269)	0.0313 (0.0509)	0.4023 (0.0435)***	0.0104 (0.0268)	0.0625 (0.0459)	0.4023 (0.0435)***
married	0.0216 (0.0214)	-0.0091 (0.0354)	-0.1894 (0.0346)***	0.0143 (0.0213)	-0.0736 (0.0320)**	-0.1894 (0.0346)***
right-left scale	0.1084 (0.0049)***	-0.0483 (0.0081)***	0.0403 (0.0066)***	0.1027 (0.0048)***	-0.0480 (0.0077)***	0.0403 (0.0066)***
(sub-)urban	-0.0418 (0.0198)**	0.0846 (0.0606)	0.6162 (0.0330)***	-0.0614 (0.0199)***	0.0372 (0.0566)	0.6162 (0.0330)***
religious beliefs undermined	-0.5778 (0.1492)***					
immigrants bad for economy				-0.7730 (0.0993)***		
interethnic contact		-0.2230 (0.0696)***			-0.2672 (0.0589)***	
foreign-born population share			4.7903 (0.4264)***			4.7899 (0.4263)***
$\text{atanh } \hat{\rho}_{12}$	0.2530 (0.0756)***			0.3809 (0.0536)***		
$\text{atanh } \hat{\rho}_{13}$	0.0049 (0.0091)			-0.0031 (0.0091)		
$\text{atanh } \hat{\rho}_{23}$	0.3137 (0.1279)**			0.3698 (0.1100)***		
Obs.	15695			15695		
AIC	110641			111834		
BIC	111422			112615		
Log Likelihood	-55218			-55815		

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015, European Union Labour Force Survey; own calculations. ©IAB

Table 19: Impact of immigration attitudes by origin and by skills on natives' support for redistribution, controlling for selective out-migration - full table
Native sample; coefficient estimates

	Immigration by Origin			Immigration by Skills		
	support for redistribution	immigration policy attitude	interethnic contact	support for redistribution	immigration policy attitude	interethnic contact
age	0.0168 (0.0033)***	0.0086 (0.0050)*	0.0221 (0.0054)***	0.0167 (0.0033)***	0.0082 (0.0052)	0.0221 (0.0054)***
age ²	-0.0001 (0.0000)***	-0.0001 (0.0001)**	-0.0004 (0.0001)***	-0.0001 (0.0000)***	-0.0001 (0.0001)*	-0.0004 (0.0001)***
education years	-0.0304 (0.0028)***	-0.0503 (0.0055)***	0.0370 (0.0041)***	-0.0246 (0.0029)***	-0.0521 (0.0057)***	0.0370 (0.0041)***
female	0.0834 (0.0176)***	0.0693 (0.0257)***	0.0367 (0.0287)	0.0796 (0.0177)***	0.0806 (0.0264)***	0.0367 (0.0287)
employment type (<i>ref.: public sector</i>)						
private sector	-0.0854 (0.0200)***	0.0786 (0.0286)***	-0.0432 (0.0322)	-0.0982 (0.0200)***	0.0881 (0.0294)***	-0.0432 (0.0322)
self-employed	-0.1558 (0.0327)***	-0.0738 (0.0503)	-0.2932 (0.0532)***	-0.1581 (0.0328)***	-0.0696 (0.0517)	-0.2932 (0.0532)***
other	-0.1201 (0.0613)*	-0.1446 (0.0828)*	-0.0021 (0.0998)	-0.1074 (0.0617)*	-0.1412 (0.0857)*	-0.0021 (0.0998)
household income	-0.0622 (0.0041)***	-0.0164 (0.0069)**	0.0420 (0.0066)***	-0.0613 (0.0041)***	-0.0162 (0.0071)**	0.0420 (0.0066)***
household member	0.0302 (0.0110)***	-0.0021 (0.0159)	-0.0249 (0.0180)	0.0299 (0.0111)***	0.0055 (0.0164)	-0.0249 (0.0180)
kids at home	-0.0368 (0.0266)	-0.0004 (0.0386)	-0.0106 (0.0433)	-0.0361 (0.0267)	-0.0136 (0.0397)	-0.0106 (0.0433)
employment status (<i>ref.: not in labor force</i>)						
unemployed	0.1179 (0.0452)***	-0.0612 (0.0650)	0.0427 (0.0721)	0.1290 (0.0454)***	-0.0458 (0.0669)	0.0427 (0.0721)
employed	-0.0020 (0.0260)	0.0674 (0.0467)	0.4121 (0.0424)***	-0.0023 (0.0261)	0.0827 (0.0480)*	0.4121 (0.0424)***
married	0.0202 (0.0208)	0.0176 (0.0328)	-0.1679 (0.0337)***	0.0165 (0.0209)	-0.0031 (0.0335)	-0.1679 (0.0337)***
right-left scale	0.0982 (0.0049)***	-0.0732 (0.0075)***	0.0396 (0.0064)***	0.1092 (0.0046)***	-0.0741 (0.0077)***	0.0396 (0.0064)***
(sub-)urban	-0.0596 (0.0194)***	-0.0010 (0.0570)	0.6149 (0.0323)***	-0.0451 (0.0195)**	-0.0185 (0.0598)	0.6149 (0.0323)***
immigration policy attitudes	-0.7546 (0.0985)***			-0.2931 (0.1055)***		
non-European immigration		0.1829 (0.0246)***				
unskilled immigration					0.5686 (0.0311)***	
interethnic contact		-0.1867 (0.0639)***			-0.1857 (0.0672)***	
foreign born population share			4.9613 (0.4216)***			4.9610 (0.4216)***
$\text{atanh } \hat{\rho}_{12}$		0.3910 (0.0541)***			0.1431 (0.0578)**	
$\text{atanh } \hat{\rho}_{13}$		0.0021 (0.0088)			0.0121 (0.0089)	
$\text{atanh } \hat{\rho}_{23}$		0.2267 (0.1177)*			0.2174 (0.1237)*	
Obs.		16590			16590	
AIC		118268			117845	
BIC		119062			118640	
Log Likelihood		-59031			-58820	

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015, European Union Labour Force Survey; own calculations. ©IAB

Table 20: Impact of immigration attitudes by origin and by skills on natives' support for redistribution, controlling for selective out-migration - full table

	Immigration by Origin and Skills		
	<i>support for redistribution</i>	<i>immigration policy attitude</i>	<i>interethnic contact</i>
age	0.0167 (0.0033)***	0.0085 (0.0052)	0.0221 (0.0054)***
age ²	-0.0001 (0.0000)***	-0.0001 (0.0001)**	-0.0004 (0.0001)***
education years	-0.0244 (0.0029)***	-0.0522 (0.0057)***	0.0370 (0.0041)***
female	0.0794 (0.0177)***	0.0805 (0.0264)***	0.0367 (0.0287)
employment type (<i>ref.: public sector</i>)			
private sector	-0.0984 (0.0200)***	0.0894 (0.0295)***	-0.0432 (0.0322)
self-employed	-0.1581 (0.0328)***	-0.0773 (0.0517)	-0.2932 (0.0532)***
other	-0.1071 (0.0617)*	-0.1457 (0.0856)*	-0.0021 (0.0998)
household income	-0.0613 (0.0041)***	-0.0156 (0.0071)**	0.0420 (0.0066)***
household member	0.0299 (0.0111)***	0.0057 (0.0164)	-0.0249 (0.0180)
kids at home	-0.0361 (0.0267)	-0.0140 (0.0397)	-0.0106 (0.0433)
employment status (<i>ref.: not in labor force</i>)			
unemployed	0.1291 (0.0454)***	-0.0485 (0.0669)	0.0427 (0.0721)
employed	-0.0024 (0.0261)	0.0825 (0.0480)*	0.4121 (0.0424)***
married	0.0164 (0.0209)	-0.0049 (0.0335)	-0.1679 (0.0337)***
right-left scale	0.1095 (0.0045)***	-0.0737 (0.0078)***	0.0396 (0.0064)***
(sub-)urban	-0.0447 (0.0195)**	-0.0093 (0.0596)	0.6149 (0.0323)***
immigration policy attitudes	-0.2816 (0.1010)***		
skilled non-European immigration		0.2085 (0.0325)***	
unskilled European immigration		0.5824 (0.0401)***	
unskilled non-European immigration		0.7613 (0.0441)***	
interethnic contact		-0.1965 (0.0665)***	
foreign born population share			4.9610 (0.4216)***
$\text{atanh } \hat{\rho}_{12}$		0.1370 (0.0552)**	
$\text{atanh } \hat{\rho}_{13}$		0.0124 (0.0088)	
$\text{atanh } \hat{\rho}_{23}$		0.2338 (0.1227)*	
Obs.		16590	
AIC		117787	
BIC		118598	
Log Likelihood		-58789	

Notes: The native sample is employed and estimation coefficients are reported. In maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. *Political orientation* is a measure of ideological self-assessment on an 11-point-scale, where 1 is “extreme right” and 11 is “extreme left”. Country fixed effects are included, but not reported. Standard errors are given in parentheses.

***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Table 21: Impact of outgroup threats on natives' support for redistribution, controlling for selective out-migration

Native sample; coefficient estimates

	Support for Redistribution		Outgroup Threat		Interethnic Contact	
outgroup threat: culture undermined						
culture undermined	-0.6649	(0.1136)***				
interethnic contact			-0.2562	(0.0554)***		
foreign-born population share					4.7879	(0.4264)***
$\text{atanh } \hat{\rho}_{12}$			0.3218	(0.0643)***		
$\text{atanh } \hat{\rho}_{13}$			-0.0089	(0.0097)		
$\text{atanh } \hat{\rho}_{23}$			0.3369	(0.1037)***		
outgroup threat: way of life worsens						
way of life worsens	-0.9485	(0.0819)***				
interethnic contact			-0.2322	(0.0623)***		
foreign-born population share					4.7896	(0.4264)***
$\text{atanh } \hat{\rho}_{12}$			0.4638	(0.0466)***		
$\text{atanh } \hat{\rho}_{13}$			-0.0038	(0.0089)		
$\text{atanh } \hat{\rho}_{23}$			0.3261	(0.1148)***		
outgroup threat: religious beliefs undermined						
religious beliefs undermined	-0.5778	(0.1492)***				
interethnic contact			-0.2230	(0.0696)***		
foreign-born population share					4.7903	(0.4264)***
$\text{atanh } \hat{\rho}_{12}$			0.253	(0.0756)***		
$\text{atanh } \hat{\rho}_{13}$			0.0049	(0.0091)		
$\text{atanh } \hat{\rho}_{23}$			0.3137	(0.1279)**		
outgroup threat: immigrants bad for economy						
immigrants bad for economy	-0.7730	(0.0993)***				
interethnic contact			-0.2672	(0.0589)***		
foreign-born population share					4.7899	(0.4263)***
$\text{atanh } \hat{\rho}_{12}$			0.3809	(0.0536)***		
$\text{atanh } \hat{\rho}_{13}$			-0.0031	(0.0091)		
$\text{atanh } \hat{\rho}_{23}$			0.3698	(0.1100)***		

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015, European Union Labour Force Survey; own calculations. ©IAB

Table 22: Impact of immigration policy attitudes on natives' support for redistribution, controlling for selective out-migration
Native sample; coefficient estimates

	Support for Redistribution		Immigration Policy Attitude		Interethnic Contact	
immigration attitude by origin						
immigration policy attitudes	-0.7546	(0.0985)***				
non-European immigration			0.1829	(0.0246)***		
interethnic contact			-0.1867	(0.0639)***		
foreign-born population share					4.9613	(0.4216)***
$\text{atanh } \hat{\rho}_{12}$			0.3910	(0.0541)***		
$\text{atanh } \hat{\rho}_{13}$			0.0021	(0.0088)		
$\text{atanh } \hat{\rho}_{23}$			0.2267	(0.1177)*		
immigration attitude by skills						
immigration policy attitudes	-0.2931	(0.1055)***				
unskilled immigration			0.5686	(0.0311)***		
interethnic contact			-0.1857	(0.0672)***		
foreign-born population share					4.9610	(0.4216)***
$\text{atanh } \hat{\rho}_{12}$			0.1431	(0.0578)**		
$\text{atanh } \hat{\rho}_{13}$			0.0121	(0.0089)		
$\text{atanh } \hat{\rho}_{23}$			0.2174	(0.1237)*		
immigration attitude by origin and skills						
immigration policy attitudes	-0.2816	(0.1010)***				
skilled non-European immigration			0.2085	(0.0325)***		
unskilled European immigration			0.5824	(0.0401)***		
unskilled non-European immigration			0.7613	(0.0441)***		
interethnic contact			-0.1965	(0.0665)***		
foreign-born population share					4.9610	(0.4216)***
$\text{atanh } \hat{\rho}_{12}$			0.1370	(0.0552)**		
$\text{atanh } \hat{\rho}_{13}$			0.0124	(0.0088)		
$\text{atanh } \hat{\rho}_{23}$			0.2338	(0.1227)*		

Notes: In the maximum likelihood estimation, ρ is not directly estimated, but $\text{atanh } \rho = 0.5 \cdot \ln((1 + \rho)/(1 - \rho))$ applies. Country fixed effects are included, but not reported. Standard errors are given in parentheses. ***significant at 1 percent, **significant at 5 percent, *significant at 10 percent.

Source: European Social Survey 2014/2015, European Union Labour Force Survey; own calculations. ©IAB

Table 23: Survey questions about attitudes towards immigrants

Variable	Survey Question	Range of Responses
Dimension: Social Distance		
<i>Mind Marriage to Relative</i>	Would you mind or not mind if someone like this (different race or ethnic group) married a close relative of yours?	1: not mind at all - 11: mind a lot
<i>Mind as Boss</i>	Would you mind or not mind if someone like this (different race or ethnic group) was appointed as your boss?	1: not mind at all - 11: mind a lot
<i>Immigrant Friends</i>	Do you have any close friends of a different race or ethnic group?	1: no, none at all 2: yes, a few; 3: yes, several
Dimension: Outgroup Threat		
<i>Culture Undermined</i>	Is cultural life generally undermined or enriched by people coming to live here from other countries ?	1: cultural life enriched - 11: cultural life undermined
<i>Way of Life Worsens</i>	Is this country made a worse or better place to live by people coming to live here from other countries ?	1: better place to live - 11: worse place to live
<i>Religious Beliefs Undermined</i>	Religious beliefs and practices are generally undermined or enriched by people coming to live here from other countries ?	1: religious beliefs enriched - 11: religious beliefs undermined
<i>Immigrants Bad for Economy</i>	Generally bad or good for country's economy that people come to live here from other countries ?	1: good for economy - 11: bad for economy

Notes: Questions about attitudes towards immigrants are based on original scaling of the European Social Survey, but ordering is partially reversed.
Source: European Social Survey 2014/2015.

Table 24: Survey experiment on respondents' attitudes towards immigration policies

Group	Survey Question	Range of Responses
Group 1	To what extent you think [country] should allow professionals from [poor European country providing largest number of migrants] come to live in [country]	1: allow many - 4: allow none
Group 2	To what extent you think [country] should allow professionals from [poor country outside Europe providing largest number of migrants] come to live in [country]	1: allow many - 4: allow none
Group 3	To what extent you think [country] should allow unskilled labourers from [poor European country providing largest number of migrants] come to live in [country]	1: allow many - 4: allow none
Group 4	To what extent you think [country] should allow unskilled labourers from [poor country outside Europe providing largest number of migrants] come to live in [country]	1: allow many - 4: allow none

Notes: Questions about attitudes towards immigrants are based on original scaling of the European Social Survey, but ordering is partially reversed.
Source: European Social Survey 2014/2015.

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