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Does immigration weaken natives' support for the unemployed? Evidence from Germany

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Abstract Using data from the 1997 and 2002 waves of the German Socio-Economic Panel and from official statistics, I study whether natives are less supportive of state help for the unemployed in regions where the share of foreigners among the unemployed is high. Unlike previous studies, I use individual-level panel data, which allows a more convincing identification of a causal effect. I find that the negative bivariate association is mainly driven by observed individual differences, such as East German origin or income. While there remains some evidence of a negative association even after adjusting for observed and unobserved individual differences, the association is relatively weak.

Keywords Unemployment · Welfare state · Immigration · Ethnic diversity · Germany

JEL Classification H53 · H55 · I38 · J15 · J61

1 Introduction

There is a large literature on the costs and benefits of immigration within a given system of social security; more recently, there has been interest in whether immigration may change this system of social security in turn. For instance, Alesina et al. (2001) and Alesina and Glaeser (2004) argue that one reason why the United States does not have a European-style welfare state is that the ethnic diversity of the population is greater there than in Europe. Likewise, in the debate about a reform of the system of social security, some people have argued that what may work in Denmark or other Nordic countries may not work in France or Germany where populations are more heterogeneous. The idea behind this claim is that a certain social cohesion is not only the result of, but also a necessary condition for social policy and redistribution, and that ethnic diversity weakens this social cohesion.

In this paper I study attitudes towards a particular aspect of the welfare state: help for the unemployed. I test the hypothesis that the larger the share of foreigners among the unemployed, the less natives will be in favor of state responsibility for helping the unemployed.

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The data are from two waves of the German Socio-Economic Panel, merged with information from official statistics on the registered unemployed.

Earlier studies have given mixed results. Using data from the General Social Survey for the years 1972 to 1993, Luttmer (2001) shows that in the United States people are more likely to express support for welfare spending if they live in a neighborhood where the share of people of their own race among welfare recipients is high. This is true whatever the economic situation of the respondents, even among wealthy people who have only a very small risk of being welfare recipients themselves. On the other hand, Alesina et al. (2001), who also use data from the General Social Survey, find that support among whites is not significantly associated with the share of blacks in the population of the respondent's state. Soroka et al. (2004) find for Canada that "the link [between regional ethnic diversity and support for social programs] is weak at best" (p. 50); "moving from 100% majority to 50% majority leads to a decrease in aggregate support for unemployment and welfare of about 0.0025%" (p. 51). Similarly, Senik et al. (2009), who use data from the European Social Survey, find that for Europe as a whole there is only weak evidence of a negative association between the perceived presence of immigrants and natives' support for the welfare state. However, this weak average relationship masks considerable heterogeneity across countries and between individuals with different attitudes towards immigrants.

The main contribution of the present paper is the use of individual-level panel data, which allows identification of a causal effect under weaker assumptions. Also, the effect of immigration on support for redistribution has not heretofore been studied for Germany—Europe's largest country of immigration in terms of absolute numbers. Finally, similar to Luttmer, I am able to relate support for a particular aspect of the welfare state (help for the unemployed) not just to the overall share of foreigners in the population, but also to their share among the unemployed.

Support for the welfare state is measured by two questions from the 1997 and 2002 waves of the German Socio-Economic Panel (GSOEP). The questions ask about the extent to which the state should be responsible for the financial security of the unemployed and for job creation measures. These are the same variables used by Alesina and Fuchs-Schündeln (2007) in their study on East-West differences in the support for redistribution. I merge these data with official statistics on the share of foreigners among the (registered) unemployed at the level of federal states, regional planning units, and counties. There is considerable variation in this share: in the state of Brandenburg in 1997, only 1% of the unemployed were foreigners; in Baden-Wuerttemberg (where overall unemployment is much lower), the share was almost 24%. While it is true that decisions about state help for the unemployed are made at the *national* level in Germany, the empirical strategy rests on the assumption that the perceived national share of foreigners among the unemployed is a positive function of the actual regional share.[1] I show evidence from the German General Social Survey (ALLBUS) that strongly supports this claim.

Different mean comparisons and bivariate regressions show that there is indeed a negative relationship between the regional share of foreigners among the unemployed and natives' solidarity with the unemployed. However, individuals self-select into regions, and the regional share of foreigners among the unemployed is therefore most likely endogenous. In particular, people of East German origin tend to be more supportive of the welfare state, and tend to live in regions with small shares of foreigners among the unemployed; other

[1] The situation in Germany is different from the United States, where unemployment insurance is a federal-state joint program and is administered at the state level.

important common influences are income and own unemployment status. As in the previous studies, I attempt to control for such common influences by using multiple regression. Moreover, the use of individual-level panel data allows me to eliminate all inconsistencies resulting from time-invariant unobserved factors.

The main result is that there is indeed evidence that German natives' support for the unemployed is negatively affected by the regional share of foreigners among the unemployed. This still holds when individual characteristics are controlled for, and also when only the within variation is exploited, although in the latter case the estimates are not always statistically significant at conventional levels. Concerning practical significance, I find that a one standard deviation increase in the regional share of foreigners among the unemployed reduces natives' support for helping the unemployed by about 2% of the standard deviation. This effect is rather small compared to other variables such as income, self-employment, or East German origin.

The rest of the paper is structured as follows. Section 2 motivates the empirical specification by reviewing theoretical arguments and empirical studies on individual attitudes towards the welfare state. Section 3 presents the data; in Sect. 4 I begin exploring the data with simple comparisons of means. Section 5 then discusses issues of identification and of statistical inference. Section 6 gives the main results. In Sect. 7, a number of tests are conducted to explore the robustness of the results. Section 8 concludes.

2 Related literature

In this section I motivate the empirical specification, and in particular the choice of control variables, by briefly reviewing theoretical arguments and previous empirical findings on the determinants of the support for redistribution.

2.1 Self-interest

There is little doubt that people's support for redistribution is partly motivated by material self-interest and that, other things equal, people who expect to benefit materially from redistribution tend to support it. The seminal model in which support for income redistribution is determined by the position in the income distribution is by Meltzer and Richard (1981), who in turn build on work by Romer (1975) and Roberts (1977). Beginning with Meltzer and Richard (1983), a number of tests have been conducted to explore the relationship between the distribution of market income (i.e, before taxes and transfers) and government spending and redistribution. The tests have produced mixed results; that is, countries with less egalitarian distributions of income do not necessarily redistribute more.[2]

While these studies relate redistribution to objective features such as the income distribution, a second strand of literature has studied the determinants of individual attitudes towards redistribution. Here, the result concerning self-interest is more clear-cut. In fact, all

[2]Important empirical contributions that find evidence supporting Meltzer and Richard's model include Meltzer and Richard (1983) and Milanovic (2000); two well-known studies who do not find that more unequal societies redistribute more are by Perotti (1996) and by Bénabou (1996). See Persson and Tabellini (2002) and Alesina and Giuliano (2009) for surveys of both the theoretical model and its extentions and of the empirical literature. A recent extension of the static framework of Meltzer and Richard to explain not only the size, but also the growth of government is proposed by Strulik (2007). The studies closest to the present article are by Razin et al. (2002) and Mayr (2007), who incorporate immigration into a framework in which self-interested voters decide on the extent of income redistribution.

of the empirical studies cited below confirm that, other things equal, support for redistribution tends to be greater among people with low incomes. But these studies also show that not everybody even in the lowest income decile favors more redistribution.

These findings need not be inconsistent with material self-interest. One explanation may be that today's poor expect to be less poor and thus expect to be among the net payers tomorrow (Bénabou and Ok 2001). Consistent with this hypothesis, Ravallion and Lokshin (2000) and Alesina and La Ferrara (2005b) find that, holding current income constant, people whose incomes have risen in the recent past or who *expect* to climb the social ladder tend to be less supportive of redistribution.[3]

There are at least two other reasons why, to borrow Roemer's (1998) expression, "the poor do not expropriate the rich" even in democracies, although the income of the median voter is less than the mean income. First, not even in democracies is the actual amount of redistribution a function only of the demand for it. Especially in representative democracies the outcome of the political process will depend, among other things, on the activity of interest groups. But if the median income is below the mean income, the "rich" are fewer in number than the "poor" and will therefore find it easier to organize and to resist attempts to distribute income away from them (this argument goes back to Olson's 1965 classic study about the logic of collective action). Moreover, as Roemer (1998) points out, people vote not only on redistribution but on a bundle of policies. Lee and Roemer (2006) and Roemer and van der Straeten (2005, 2006) show how anti-immigrant feelings—in combination with a voting system in which parties offer a policy-bundle combining economic and non-economic issues—has reduced support for the pro-redistribution party in elections in the United States, France, and Denmark.

Second, people likely take into account the distortions caused by taxation that shrink the pie that could be shared. Piketty (1995, 1996a, 1996b, 2003) finds that people who believe that effort (as opposed to external circumstances) is important for economic success tend to be less supportive of redistribution, arguably because the greater the importance of effort in production, the greater the distortions caused by taxation.

2.2 Inter-dependent preferences

As Fong (2001) argues, the negative correlation between belief in the role of effort and the support for redistribution can also stem from concerns about fairness: if people believe that the just reward is proportional to one's own effort and should be independent of circumstances for which the individual is not responsible, then their support for redistribution will be lower the greater their belief that one's economic position depends on one's own effort.

The general idea is that the support for redistribution reflects not only self-interest but also social preferences: most people care not only about their own absolute income, but also about the income, consumption, or utility of other people (Hochman and Rodgers 1969), about the income distribution as a whole (Thurow 1971), or about the way the distribution of income, consumption, or utility is arrived at. In the presence of certain inter-dependent preferences, redistribution may be Pareto-improving and even net payers may support it.[4] Note that this support may not (fully) translate into actual private redistribution because of a free-rider problem; this is one argument for compulsory redistribution by the state.

[3] Likewise, even today's net payers may support state-organized redistribution as a form of insurance against downward social mobility (e.g., Buchanan and Tullock 1962; Brennan 1973; Varian 1980).

[4] Voluntary redistribution may also arise from self-interest, as Brennan (1973) points out. It may well be that the net payers support redistribution not out of altruism but as a form of protection against crime or civil unrest.

2.3 Social distance

There is much evidence, both from observational and from experimental studies, that altruistic behavior depends on the situation and on the market and non-market characteristics of those involved.[5] As Bowles and Gintis (2000, 45) put it, "reciprocity is more salient, the less is the perceived social distance among the participants. ... Economic inequality—particularly when overlaid with racial, ethnic, language, and other differences—increases the social distance that then undermines the motivational basis for reaching out to those in need."

The idea that social distance affects the support for redistribution has been formalized by Corneo and Grüner (2000) and tested by Corneo and Grüner (2000, 2002) and by Corneo (2003). Using differences in occupational prestige as a proxy for social distance, they show that the greater the difference in average occupational prestige between one's own and the income class just below, the lower is the support for redistribution. By contrast, the greater the social distance to the income class just above one's own, the greater is the support for redistribution. In their empirical studies an important part of the cross-regional or cross-country variation in the support for redistribution remains unexplained, however.

The hypothesis of the present article is that this unexplained regional variation in the support for redistribution partly results from the variation in the share of immigrants among the beneficiaries of redistribution. The assumptions are that (A1) support for redistribution is motivated both by self-interest and by altruism; (A2) altruism is weaker the greater the perceived social distance between people, and (A3), other things equal, perceived social distance is greater between German nationals and immigrants than within either category.[6]

Together, assumptions (A2) and (A3) imply that, other things equal, a German native will feel less altruistic towards an immigrant than towards another German native. Adding assumption (A1), the prediction is that, other things equal, natives will be less supportive of redistribution the greater is the perceived share of immigrants among the beneficiaries of redistribution. The other things that have to be held equal are (1) material self-interest of the respondent; (2) attributes of the beneficiaries of redistribution (other than their country of origin) which may affect the respondent's support for redistribution. As in other observational studies, the present article attempts to hold these other things equal by including control variables in a parametric model. Admittedly, this approach only rarely leads to estimates of causal effects that are convincing by the standards of modern microeconometrics. Recently, the literature has therefore complemented these observational studies by experimental evidence.[7]

As far as observational studies on the effect of ethnic diversity on the support for redistribution go, the present one is the first to use individual-level panel data, which allows identification of a causal effect under weaker assumptions than in the previous studies by Luttmer (2001), Alesina et al. (2001), Soroka et al. (2004), and Senik et al. (2009), all of whom use cross-sectional data.

[5] This literature has been surveyed by Miller (1992), Alesina and La Ferrara (2005a), and Stichnoth and van der Straeten (2009).

[6] Models based on very similar assumptions have been formalized by Lind (2007) and by Senik et al. (2009). Technically, these models posit that in an inter-dependent utility function, the weight that person A attaches to person B's income or utility decreases the greater the social distance between the two. Usually, only two groups are considered, such as immigrants and natives.

[7] Two well-known early studies are by Glaeser et al. (2000) and by Fershtman and Gneezy (2001); recent contributions include Falk and Zehnder (2007) and Fong and Luttmer (2009); see the survey by Stichnoth and van der Straeten (2009).

3 Data

I merge data from the German Socio-Economic Panel (GSOEP) with data from official statistics on the share of foreigners among the registered unemployed at three different regional levels.

The GSOEP, which started in 1984, is a longitudinal survey of private households.[8] I use the waves of 1997 and 2002, in which social security was a special topic. I restrict the sample to respondents with German nationality, which leaves me with 33203 person-year observations. Of these, 2833 people participated in the 1997 wave only; 8399 people participated in both waves, and 13572 people took part in the 2002 wave only. The increase in sample size between 1997 and 2002 is due to the "Supplementary Sample E" (1998), the "Innovation Sample F" (2000), and the "High-income Sample G" (2002).

The GSOEP contains regional identifiers at three different regional levels: counties, regional planning units, and federal states. For reasons of data security, the analysis with the identifiers at the levels of counties and regional planning units was conducted on-site at DIW Berlin. I merged the GSOEP with regional information, in particular the share of foreigners among the unemployed, that I obtained from the 1999 and 2004 editions of the CD-ROM "Indikatoren und Karten zur Raumentwicklung" (Indicators and Maps for Regional Development), published by the Bundesamt für Bauwesen und Raumordnung (Federal Office for Building and Regional Planning).[9]

3.1 Dependent variable: attitudes towards state responsibility for the unemployed

In 1997 and 2002, participants in the GSOEP were asked whether they wanted the state or private forces to be responsible for helping the unemployed. The question ran: "At present a multitude of social services are provided not only by the state but also by private free-market enterprises, organizations, associations, or private citizens. What is your opinion on this? Who should be responsible for the following areas: only the state, mostly the state, state and private forces, mostly private forces, or only private forces?" Eleven items follow, of which I use two: state responsibility for "financial security in case of unemployment" and for "job creation measures".[10]

As Figs. 1 and 2 (both reported in the Appendix) show, most respondents are in favor of some state responsibility for helping the unemployed. Support is stronger for financial security than for job creation measures.[11]

[8] The data are available from the German Socio-Economic Panel Study (GSOEP) at the German Institute for Economic Research (DIW) in Berlin. See Wagner et al. (2007) for a detailed description of the GSOEP.

[9] www.bbr.bund.de.

[10] The nine other items are: "financial security of families", "financial security in case of illness", "financial security for old age", "financial security for persons needing care", "caring for pre-schoolers", "caring for school children", "care and help for the sick", "care and help for the aged", and "care and help for persons needing care".

[11] As discussed at length in the working paper version of this article, the dependent variables are not without their problems, but do seem like a reasonable compromise, bearing in mind that there are no better alternatives in the GSOEP. The fact that Alesina and Fuchs-Schündeln (2007) use the same questions (in fact, all 11 items, not just the two that ask about the unemployed) for a very similar purpose lends further support to their use in the present study.

3.2 Regressor of interest: regional variation in the share of foreigners among the unemployed

The regressor of interest is the share of foreigners among the registered unemployed in the respondent's region. This variable is available on a yearly basis from official statistics for three regional levels: the 16 federal states, 97 regional planning units, and 437 counties in Germany.

That I use the share of *foreigners* among the unemployed and not the share of immigrants (perhaps even including the second generation) is dictated by data availability: official statistics report only the share of foreigners among the unemployed and not the share of immigrants. Given that I therefore have to make do with nationality when measuring the share of the out-group among the unemployed, I choose also to distinguish respondents in the GSOEP by nationality. The results change little when country of birth is used instead.

As Table 2 (which pools the data for 1997 and 2002) shows, the share of foreigners among the unemployed is larger than their share in the general population and exhibits considerable regional variation. Figure 3 shows the unemployment rate, the share of foreigners in the population and among the unemployed for the 16 federal states.[12] In the Eastern state of Brandenburg in 1997, 1% of the registered unemployed were foreigners; in Baden-Wuerttemberg in the same year, their share was 23.9%. At the two more disaggregated levels of regions and counties, the variation is of course even greater.

The empirical strategy, described in Sect. 5, will consist in using only the variation *within* individuals between 1997 and 2002. The cross-sectional variation *between* individuals is considered contaminated by unobserved individual characteristics, which are assumed to be time-invariant. After the within transformation, these unobserved time-invariant individual characteristics will be eliminated from the estimating equation.

Throwing away variation will reduce the precision of the estimates. It is therefore instructive to decompose the overall variation into variation within and variation between individuals. The precision of the within-estimator will depend on how much variation is left after discarding the variation between individuals.

Using only within variation comes at a large cost in terms of variation: only between 1.2% (federal states) and 4.5% (counties) of the overall variation is within variation.[13] Part of this low within variation can be explained by the unbalanced nature of the panel. As noted above, only 8399 people have valid information on the share of foreigners among the unemployed in both waves. This means that only $(2 \cdot 8399)/33203 \approx 0.51$ of the sample can be used for the within estimator. When only the observations from the balanced panel are used, the share of within variation is almost twice as high. However, the share is still at most 9%; this low figure reflects the high persistence of the share of the foreigners among the unemployed, and the rather low geographical mobility in Germany, compared to, say, the United States.

Although decisions about state help for the unemployed are made at the *national* level in Germany, the empirical strategy rests on the assumption that the perceived national share of foreigners among the unemployed is a positive function of the actual regional share. Tables 4 in the Appendix shows evidence that strongly supports this claim.[14] The table is based on the

[12] Rheinland-Pfalz and Saarland have been grouped together since these two states form a single category in the GSOEP.

[13] The detailed results for this decomposition are reported in the working paper version of this article.

[14] I am grateful to an anonymous referee for pointing out that the empirical strategy needed better justification here.

German General Social Survey (ALLBUS). The ALLBUS is a repeated cross-section that began in 1980; the survey is conducted every two years. Each wave has one or several special topics. I use the wave of 2006 here because it focuses on both attitudes towards immigration and attitudes towards the state. The ALLBUS wave of 2006 asks respondents about the shares they perceive of foreigners in West Germany and East Germany.[15] Moreover, there is information on the actual share of foreigners in the county the respondent lives in. Finally, because it is known in which federal state the respondent lives, I was able to merge this information with the population share of foreigners at the state level. That is, information is available for two of the three regional levels that I use in the paper. Information on the regional planning unit is not available and could not be constructed, because the ALLBUS contains the share of foreigners at the county level, but not the county identifier itself.

Table 4 shows that the perceived national share of foreigners is positively related to the actual regional share.[16] This holds true for the bivariate relationship and also when controlling for (almost) the same set of variables that will be used in the main analysis below.[17] To be consistent with the analysis below, the analysis based on the ALLBUS also includes only German nationals. Admittedly, the ALLBUS asks about the perceived share of foreigners in the population, not about the perceived share among the unemployed. Nevertheless, I believe that the evidence from the ALLBUS supports the claim on which my empirical strategy is based, namely that the actual regional shares of foreigners among the unemployed influence the perception of the *national* share of foreigners among the unemployed.

3.3 Control variables

The GSOEP allows one to control for a number of variables that influence both a person's support for the welfare state and his place of residence and hence the regional share of foreigners among the unemployed.

I control for the respondent's gender, labor force status, income, education, age, marital status, and household composition. Socialization in East Germany is proxied by a dummy variable that indicates whether the respondent lived in West or East Germany in 1989. Table 3 in the Appendix reports summary statistics for the individual-level control variables.

In addition to these individual characteristics, in some specifications I control for the area's unemployment rate and for the share of foreigners in the population (as opposed to their share among the registered unemployed). Finally, I include a year dummy in the model to allow the overall support for redistribution to differ between 1997 and 2002.

As shown in the working paper version of this article, mean values of these control variables differ between respondents who support state responsibility for the unemployed and respondents who favor private responsibility. People who prefer state responsibility tend to be disproportionately East German (defined either by residence in 1989 or by current

[15] From these two separate questions I constructed the perceived national share using the population weights of West and East Germany: in 2006, Germany had about 82.3 million inhabitants, of which 65.6 million lived in the West and 16.6 million in the East.

[16] The positive relationship is only documented at the county level here. Similar results are obtained at the level of federal states.

[17] Incidentally, these results confirm the patterns found by Senik, Stichnoth, and Van der Straeten (2009) in their article based on the European Social Survey (ESS): for instance, in both the ESS and the ALLBUS, people tend to overestimate the share of foreigners in the population; men and people with higher education tend to report a lower share.

residence). Alesina and Fuchs-Schündeln (2007) have shown that this holds true even controlling for other factors. Moreover, and consistent with theories that point to material self-interest as a determinant of support for the welfare state, the table shows that people who favor state responsibility for the unemployed are twice as likely to be unemployed themselves; that they tend to have lower household incomes, and that they are less likely to have a secondary degree (Abitur) or a college degree. The mean differences are highly statistically significant. By contrast, there is little difference with respect to sex or marital status.

4 Mean comparisons

I begin the analysis by exploring the *bivariate* association between the share of foreigners among the unemployed and natives' support for redistribution. German nationals who prefer state responsibility for the financial security of the unemployed tend to live in regions with smaller shares of foreigners among the unemployed.[18] This is true for all three regions: federal states, regional planning units, and counties. The differences are highly statistically significant.

In Table 5 the bivariate relationship between the share of foreigners among the unemployed and the support for redistribution is shown from a slightly different angle. The table shows that mean support for helping the unemployed is lower in regions where the shares of foreigners among the unemployed exceed the median share. This holds for all three regions and for all three variables used to measure the support for redistribution. (Each panel of the table corresponds to a region; within each panel, each row corresponds to a different dependent variable).

However, given that people self-select into regions, there are likely to be other factors that influence both the support of redistribution and the share of foreigners among the unemployed in the respondent's region. It was already pointed out above that people who prefer state responsibility for the unemployed tend to be poorer, disproportionately often from East Germany, and that they have a greater probability of being unemployed themselves. Some of these variables also predict whether a respondent lives in a county, region, or federal state with a large or small share of foreigners among the unemployed. For instance, among people who live in counties with small shares of foreigners among the unemployed, East Germans (defined by residence in 1989 or by current residence) are overrepresented. Moreover, people in counties with small shares tend also to have low household incomes and are more likely to be unemployed. As noted, all these factors are also positively correlated with support for the state helping the unemployed, and will therefore at least partly drive the negative bivariate relationship between the share of foreigners among the unemployed and support for helping the unemployed.

5 Specification

To control for these confounding factors, a multivariate model is specified. The basic specification derives from the theoretical considerations of Sect. 2. The support of native i in area k in year t is modelled as

$$Support_{ikt} = \mathbf{x}'_{ikt}\beta + \alpha_i + \varepsilon_{ikt} \tag{1}$$

[18] These results are shown in the working paper version of this article.

$Support_{ikt}$ measures support for state help for the unemployed. The regressor of interest in $\mathbf{x}_{ikt}$ is $ShareForeign_{kt}$, the share of foreigners among the registered unemployed in area k. In addition, $\mathbf{x}_{ikt}$ contains a number of control variables. As noted in Sect. 3, I control both for individual and for area-level characteristics. Depending on the model, the area subscript k indexes counties, regional planning units, or federal states.

Note that the slope coefficients are assumed to be fixed and identical across observations. By contrast, the intercept α_i is a random variable that captures unobserved heterogeneity between individuals.

I assume that the idiosyncratic error is strictly exogenous:

$$\mathbb{E}(\varepsilon_{ikt} \mid \alpha_i, \mathbf{x}_{ik1}, \mathbf{x}_{ik2}) = 0 \quad t = 1, 2. \tag{2}$$

Strict exogeneity assumes that all time-*varying* unobserved effects have zero mean conditional not only on current, but also on past and future values of the regressors. In other words, I assume that all unobserved variables that are correlated with the regressors are time-*invariant* and are therefore captured by α_i.

Admittedly, the assumption of strict exogeneity is quite strong. The only defense is that it is *less* strong than in previous studies on the effect of ethnic diversity on the support for redistribution. These earlier studies use repeated cross-sections and therefore include both time-varying and time-invariant unobserved effects in the error term ε_{ikt}. Because the present study uses panel data, at least the time-invariant unobserved effects are eliminated as a source of inconsistency. Of course, it would be highly desirable to find valid external instruments for the share of foreigners among the registered unemployed in a region.

Under strict exogeneity, the conditional mean of $Support_{ikt}$ is given by

$$\mathbb{E}(Support_{ikt} \mid \mathbf{x}_{ikt}) = \mathbb{E}(\alpha_i \mid \mathbf{x}_{ikt}) + \mathbf{x}'_{ikt}\beta. \tag{3}$$

The main modelling decision concerns the relation between the regressors and the unobserved, time-invariant individual-specific effect α_i. It seems likely that despite the inclusion of a standard set of control variables, there are still some unobserved time-invariant, individual-specific factors that affect both $ShareForeign_{ikt}$ and the support for helping the unemployed. Hence, it is likely that $\mathbb{E}(\alpha_i \mid \mathbf{x}_{ikt}) \neq 0$; under this assumption, pooled OLS or random effect estimators will be inconsistent. However, the time-invariant unobserved effect α_i can be eliminated through a within-transformation that expresses all variables as deviations from their individual means. This within estimator is consistent under the (weaker) assumption that all unobserved heterogeneity is time-invariant.

The possibility of these transformations to eliminate α_i explains why I choose to estimate a linear model, even though the dependent variables are categorical (with five answer categories). This modelling decision is popular in applied microeconometrics; it is generally believed that a linear fixed-effects model is superior to a non-linear random effects model in applications like the present one. Ferrer-i-Carbonell and Frijters (2004) make a similar case concerning studies of the determinants of life satisfaction.

With panel data, the unobserved time-varying components in different time periods are likely to be correlated for the same individual. Moreover, the error terms are likely to be heteroscedastic. For both reasons, inference should not be based on the assumption of independent and identically distributed errors, but rather on a panel-robust estimate of the asymptotic variance matrix, which takes into account both heteroscedasticity and between-period correlation of error terms for the same individual.

The working paper version of this article contains a discussion of how to additionally take clustering at the area-level into account, using the variance estimator proposed by Thompson (2011) and Cameron et al. (2011).

Table 1 Overview of results for the dependent variable 'state responsibility for the financial security for the unemployed'

	Bivariate		Full controls	
	RE	FE	RE	FE
County	−0.0089*	−0.0043	−0.0018*	−0.004
	(0.00054)	(0.0022)	(0.0007)	(0.0023)
Regional planning unit	−0.011*	−0.008*	−0.0018*	−0.0069
	(0.00059)	(0.004)	(0.00086)	(0.0042)
Federal state	−0.014*	−0.0089	−0.0023*	−0.0045
	(0.00063)	(0.0049)	(0.0011)	(0.0054)

Note: Asymptotic standard errors—robust to heteroscedasticity and serial correlation—are shown in parentheses. An asterisk denotes statistical significance at the 5% level

6 Results

This section presents results for a number of models, which are all variants of (1). There are six basic combinations: two different dependent variables (financial support for the unemployed and job creation measures) and three regional levels at which the share of foreigners among the unemployed is measured (counties, regional planning units, federal states). For each of these combinations, the set of covariates is gradually built up: I begin with a bivariate model and then include a growing number of individual controls. Finally, aggregate-level controls will be added as well; these results are discussed in Sect. 7.

To avoid losing track of this large number of variants, I present only the estimated coefficients for the share of foreigners among the unemployed in this section; coefficient estimates for the control variables can be found in the Appendix. Moreover, I show results only for the bivariate regression and then for a model with the full set of controls here; the gradual built-up of the specification is also documented in the Appendix.

Table 1 shows estimated coefficients for the regressor of interest when the dependent variable is the support for financial security of the unemployed. The first two columns of the table correspond to a bivariate model; columns 3 and 4 are for a model with the full set of individual controls. Intermediate specifications, in which only subsets of the individual controls are included, are shown in Tables 6 (random effects) and 7 (fixed effects) in the Appendix. These tables also report estimated coefficients for the control variables.[19]

The standard errors in the table are robust to heteroscedasticity and serial correlation. Note that I do not yet use the variance estimator that allows for two-way clustering here, because the estimator assumes that an individual is part of exactly one area cluster. Since some people change their area of residence, this does not hold for everybody in the sample. In Sect. 7 I will therefore restrict the sample to people who stay in the same area, in order to allow for two-way clustering.

6.1 Random effects

The results for the random effects models are shown in columns 1 and 3 of Table 1 and Table 6.

[19]To save space, full estimation results are shown only for the county level. Full results for the two other regional levels can be found in the working paper version of this article.

Sign and statistical significance At all three geographical levels, there is evidence of a negative bivariate relationship. The coefficient estimates are −0.0089 when the share of foreigners is measured at the county level, −0.011 when it is measured at the level of regional planning units, and −0.014 when it is measured at the level of federal states. All three estimates are highly statistically significant.

Columns (2) to (5) of Table 6 show that the coefficients are reduced in absolute magnitude as further controls are added. As expected from the discussion of the bivariate associations in Sect. 3, the biggest reductions occur once income and East German origin are added as controls. As noted, natives who live in areas with large shares of foreigners among the unemployed tend to have lower incomes and, at the same time, people with low incomes tend to support help for the unemployed, arguably out of material self-interest (because they have fewer own resources on which to fall back during a spell of unemployment, and a greater risk of becoming unemployed in the first place). East German residence (in 1989 or in the current periods of 1997 and 2002) is associated with a small share of foreigners among the unemployed; at the same time, the table shows that East Germans tend to be more supportive of state help for the unemployed, even controlling for material self-interest.[20]

However, the principal result is that the marginal effect of a change in the share of foreigners among the unemployed in a region on the support for state help for the unemployed remains negative and significantly different from zero even after these individual characteristics are controlled for.

Size of the coefficients With full individual controls, the estimated coefficients in the random-effects model are −0.0018 for counties and regions, and −0.0023 for federal states.

To put these estimates into perspective, Table 2 shows that the mean share of foreigners among the unemployed is slightly above 13%. Typical regions in this respect are Osnabrück with a share of 13.3% or Siegen with a share of 13.5%. The standard deviation is about nine percentage points for regional planning units. Shares of around $13\% + 9\% = 22\%$ are observed in regions such as Düsseldorf or Franken; shares of around $13\% - 9\% = 4\%$ are observed in the South-West of Schleswig-Holstein or Western Saxony.

A one standard deviation increase in the share of foreigners among the unemployed (e.g., the difference between Osnabrück and Düsseldorf) is thus associated with a reduction in support of around $9 \cdot (-0.0018) = -0.0162$, once observed individual characteristics are controlled for.

The dependent variable "financial support" has a mean of 3.9 and a standard deviation of 0.8. That is, a one standard deviation increase in the share of foreigners among the unemployed is associated with a reduction in support for financially helping the unemployed of about two percent of the standard deviation of the dependent variable ($0.0162/0.8 \approx 0.02$). This is a very small effect when compared to the influence of variables such as East German origin or household income. People of East German origin tend to be more supportive by 0.2 points, more than ten times the difference associated with a one standard deviation increase in the share of foreigners among the unemployed.

[20] In this respect, the present paper is a partial replication study of Alesina and Fuchs-Schündeln's (2007) article, and confirms their main results concerning the variables related to state help for the unemployed. The replication is only partial because Alesina and Fuchs-Schündeln use a wider set of dependent variables. By contrast, and as noted above, I focus on support for the unemployed because this is the measure of support for the welfare state that corresponds directly to the regressor of interest, namely the share of foreigners among the unemployed.

Results for control variables Concerning the other control variables, I find that the results from the mean comparisons of Sect. 4 survive in the multivariate regression models. In the random-effects models, people with high income or high wealth (proxied for by home ownership) tend to be less supportive of state help for the unemployed. For a given household income, support increases with household size. People who are currently unemployed themselves tend to be more supportive. The self-employed tend to be much less supportive. Even controlling for other factors, people with a secondary school degree (*Abitur*) tend to be less supportive. Women tend to be more supportive than men.

Evidence on the relationship between expected future income and the support for redistribution comes from two questions about people's economic concerns. Since I hold current income constant, these questions are supposed to measure people's expectations about whether they may personally benefit from the welfare state in the future; that is, the questions still proxy material self-interest, but the self-interest is less myopic than in the case of current income. Consistent with Bénabou and Ok's (2001) "POUM hypothesis" (probability of upward mobility), I find that people who are concerned about their own financial situation and about the economy as a whole tend to be more supportive of redistribution.

6.2 Fixed effects

The advantage of this article over previous studies is that I use panel data; by using only the "within" variation, I can therefore eliminate all inconsistency stemming from *time-invariant* omitted variables.

However, the price to pay for discarding the potentially contaminated "between" variation is that the precision of the estimates will be reduced. As shown in Sect. 3, in the unbalanced panel only 4.8% of the overall variation is within variation in the present application. This low figure reflects the high persistence of the share of the foreigners among the unemployed, and the rather low geographical mobility in Germany, compared to, say, the United States. As a result, while the data used in the present article offer an advantage in principle, the actual benefit is modest given the small within variation that are observed with only two waves.[21] The low within variation shows up in the fixed effects estimates, which are shown in columns 2 and 4 of Table 1, and in Table 7 in the Appendix.

The point estimates for the effect of the share of foreigners among the unemployed on German nationals' support for helping the unemployed are again negative for all three regional levels.

Concerning statistical significance, I find that the coefficients for the model with full individual controls are insignificant at conventional levels for federal states and regional planning units: the estimated coefficients are −0.0069 (SE: 0.004) and −0.0045 (SE: 0.005), respectively. At the level of counties, the estimated coefficient of −0.004 is weakly significant (SE: 0.0023). Its point estimate is almost twice as large in absolute value as for the random effects model (−0.004 versus −0.0018). However, as discussed above, even this larger coefficient is small relative to the coefficients for income or education.[22]

[21] In future work I plan to go back to the GSOEP waves of 1987, 1992, and 1997, which contain a general question on whether the state should be responsible for social security. However, compared to the variables used in the present version of this article, the general question of the three earlier waves has the drawback that it does not specifically ask about support for the unemployed. The link with the share of foreigners among the unemployed is therefore weaker.

[22] Generally, Table 7 shows that in the fixed-effects models the coefficients on the control variables tend to have the same signs as in the random effects model, but due to the smaller variation, many of the coefficients are no longer statistically significant. Coefficients on time-invariant regressors such as sex or East German origin are not identified at all, of course.

6.3 Hausman tests

Following Hausman (1978), I test whether the coefficient estimates on the time-varying regressors obtained using the within-estimator are significantly different from the random-effects estimates. However, the random-effects estimator is not fully efficient if the error term is not iid; as a result, the simplified test statistic of the Hausman test, in which only the difference of two variance estimators enters the expression, cannot be used. Instead, one needs the more complicated expression for the variance of the difference between the estimators (see Cameron and Trivedi 2005, p. 718).

I find that in all but one case the test rejects the null hypothesis that time-varying parameters are the same for the random-effects estimator and the within estimator.[23] That is, the tests suggests-that the random-effects estimates are likely to be inconsistent. At the same time, the fixed effects estimates—which are consistent under the assumption that all unobserved heterogeneity is captured by a time-invariant intercept—are rather imprecisely estimated because only a very small part of overall variation is within variation. In fact, for almost all models reported in Table 1, the fixed-effects estimates are not significantly different from zero. Concerning practical significance, it has been shown above that the random effects estimates suggest a rather weak influence of the share of foreigners among the unemployed on German nationals' support for helping the unemployed. The same conclusion holds for the fixed-effects estimates. For the level of federal states, the model with full individual controls estimates the lower bound of the 95% confidence interval to be roughly -0.0145; for regional planning units, this lower bound is very similar at about -0.0149. For counties, the association is even weaker, with a lower bound of approximately -0.008. As column 5 of Table 7 shows, even these lower bounds are small (in absolute values) compared to the influence of other variables such as education: for instance, the point estimate for the dummy Abitur (secondary school degree) is -0.17.

7 Robustness checks

To assess the robustness of the results, a number of checks have been conducted.[24]

First, it has been checked that the basic results are qualitatively unchanged when a different dependent variable is used: the question whether respondents think that the state should be responsible for job creation measures.

Second, the sample was restricted to people who live in the same area in 1997 and 2002. This means that the within-variation is further reduced: now all within-variation comes from changes in the share of foreigners among the unemployed in a given region. The advantage is that time-*invariant* characteristics of the *area*, which influence both the support for redistribution and the share of foreigners among the unemployed, no longer render the estimator inconsistent. Above, only time-invariant characteristics of the *individuals* were eliminated from the models by the within-transformation. The results still go through when the model is estimated on this sample of "stayers" and with standard errors that are robust not only to heteroscedasticity and serial correlation, but also to contemporaneous correlation between individuals living in the same region.

[23] These results are reported in the working paper version of this article.

[24] For sake of brevity, the results from these checks are not shown here, but can be found in the working paper version of this article.

Third, given the East-West differences in the support for the welfare state found above—and already highlighted by Alesina and Fuchs-Schündeln (2007)— the model has also been estimated separately by current region and by region in 1989.

Finally, counties, regional planning units, and federal states that differ in the share of foreigners among the unemployed will also differ in other respects. So far, these other differences were part of the error term.[25] However, to the extent that these unobserved area-level variables are correlated with both the share of foreigners among the unemployed and with natives' support for helping the unemployed, the OLS estimates will be biased.

One of these area-level variables is of special interest. Luttmer (2001) shows that the support for welfare is lower in communities with larger percentages of welfare recipients. He calls this a "negative exposure effect"—the effect that "individuals decrease their support for welfare as the welfare recipiency rate in their community rises" (Luttmer 2001, 500). Luttmer argues that such "a negative relationship could arise from financial or psychological costs that respondents attribute to giving welfare to local recipients" (p. 506). In results reported in the working paper version of this article, I find that the regional unemployment rate tends to be positively associated with natives' support for helping the unemployed. That is, I do *not* find evidence for the "negative exposure effect" that Luttmer (2001) finds for the support for welfare spending in the United States.

8 Conclusion

Based on data from the 1997 and 2002 waves of the German Socio-Economic Panel and from official statistics, this article has studied whether natives are less supportive of state help for the unemployed in regions where the share of foreigners among the unemployed is high. Unlike previous studies using (repeated) cross-sections, the models were estimated using individual-level panel data, which allows more convincing identification of a causal effect.

The main result is that there is indeed evidence that German natives' support for the unemployed is negatively affected by the regional share of foreigners among the unemployed. Mean comparisons show that people in areas with larger percentages of foreigners among the unemployed do tend to be less supportive of state help for the unemployed. However, much of this difference is driven by common influences such as income or East German origin. Once these individual characteristics are controlled for, the share of foreigners among the unemployed is still negatively associated with natives' support for the unemployed, but the association is rather weak compared to other variables such as income, self-employment, or East German origin.

Although not the main focus of this paper, two other results relating to earlier studies have been obtained. First, I find that East Germans tend to be more supportive of state help for the unemployed, even controlling for material self-interest. This confirms the results by Alesina and Fuchs-Schündeln (2007), who use almost the same data and similar specifications. By contrast, I did not find evidence of a "negative exposure effect", the effect that "individuals decrease their support for welfare as the welfare recipiency rate in their community rises" (Luttmer 2001, 500). In Germany, the regional unemployment rate tends to be *positively* associated with natives' support for helping the unemployed.

[25] Except in the second robustness check, where all time-*invariant* area characteristics were eliminated in the estimation. In the present test, by contrast, the focus is on the influence of area characteristics that do vary over time.

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Appendix

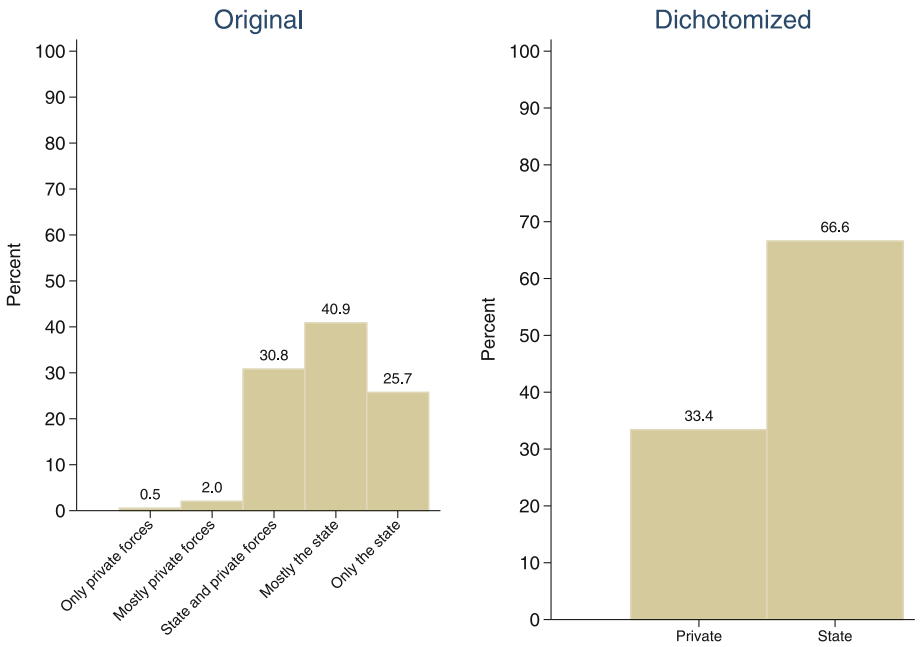


Fig. 1 Responsibility for financial security of the unemployed

Table 2 Regional variables

Level	Variable	Mean	SD	Min	Max
County	Unemployment rate	11.9	5.2	0.4	29.5
	Foreigners per 100 residents	8.2	5.6	0.4	26.0
	Foreigners/100 unemployed	13.1	9.7	0.3	44.2
Regional planning unit	Unemployment rate	12.1	4.9	5.1	25.5
	Foreigners per 100 residents	8.3	4.8	1.3	17.5
	Foreigners/100 unemployed	13.4	8.9	0.5	33.4
Federal state	Unemployment rate	11.9	4.6	6.8	21.1
	Foreigners per 100 residents	8.0	4.1	1.5	15.2
	Foreigners/100 unemployed	13.1	7.7	1.0	23.9

Note: Own calculations based on *Indikatoren und Karten zur Raumentwicklung*, published by the Bundesamt fuer Bauwesen und Raumordnung; 1999 and 2004 editions of the CD-ROM

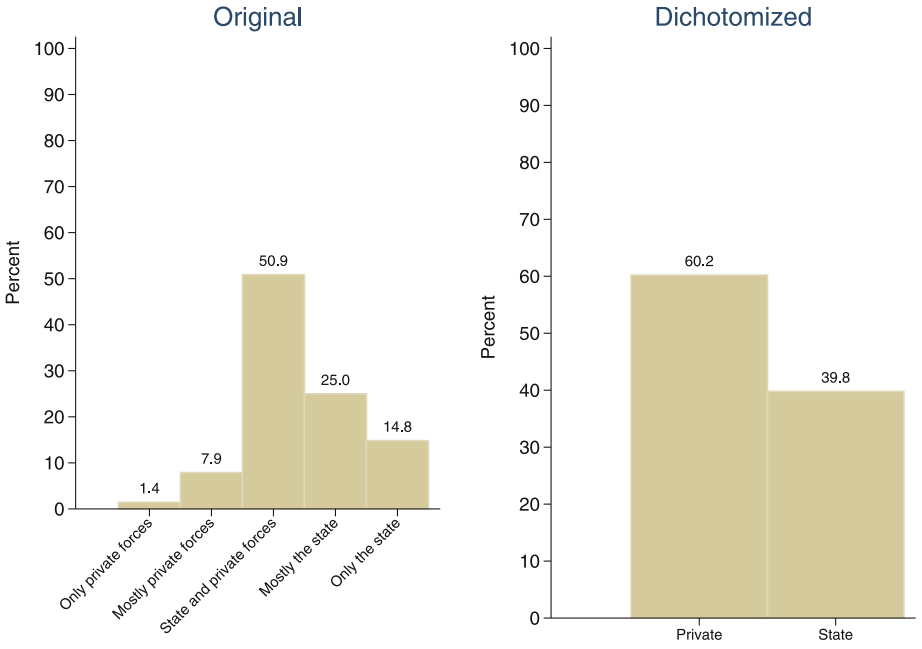
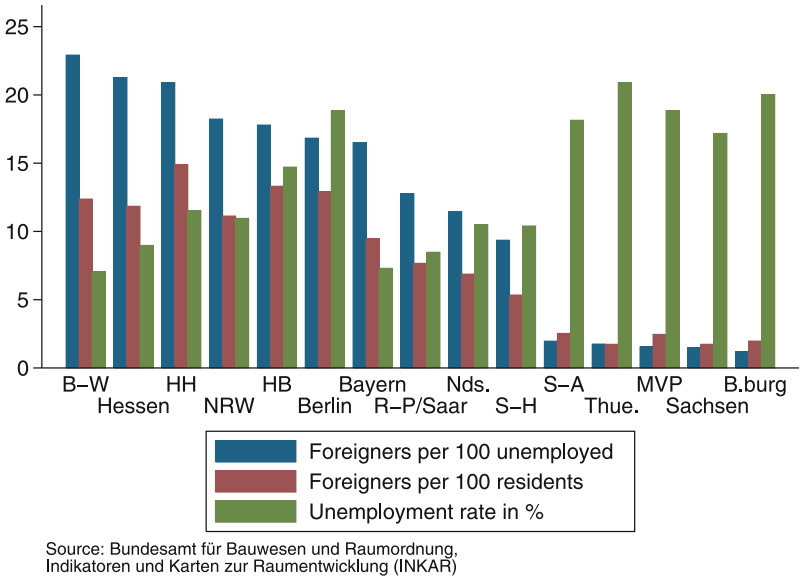


Fig. 2 Responsibility for job creation



Source: Bundesamt für Bauwesen und Raumordnung, Indikatoren und Karten zur Raumentwicklung (INKAR)

Fig. 3 Regional indicators for federal states, 1997 and 2002 pooled

Table 3 Summary statistics

Variable	Mean	SD	Min	Max	N
State responsible: financial security unemployed	0.67	.	0	1	32750
State responsible for job creation	0.40	.	0	1	32759
Male	0.48	.	0	1	33203
Age	46.09	17.21	17	99	33203
Lived in East in 1989	0.31	.	0	1	31030
Lives in East	0.28	.	0	1	33202
Born abroad	0.07	.	0	1	32496
Household size	2.81	1.27	1	12	33203
Single	0.24	.	0	1	33200
Married	0.61	.	0	1	33200
Married but separated	0.02	.	0	1	33200
Divorced	0.07	.	0	1	33200
Widowed	0.07	.	0	1	33200
Household net income (month)	2739.93	1528.50	480	10428	31318
Working	0.59	.	0	1	33203
Not working, unemployed	0.05	.	0	1	33203
Not working, other reasons	0.36	.	0	1	33203
Civil servant	0.05	.	0	1	33178
Self-employed	0.06	.	0	1	33195
Owns residence	0.52	.	0	1	33203
Worried overall economy	1.68	0.60	1	3	33052
Worried own economic situation	2.11	0.68	1	3	33043
No degree yet	0.03	.	0	1	32627
Dropout, no degree	0.02	.	0	1	32627
Hauptschule	0.38	.	0	1	32627
Realschule	0.31	.	0	1	32627
Abitur	0.23	.	0	1	32627
Other degree	0.04	.	0	1	32627
College degree	0.19	.	0	1	32811
Vocational degree	0.66	.	0	1	32811
Year = 1997	0.34	.	0	1	33203
Year = 2002	0.66	.	0	1	33203

Note: GSOEP 1997 and 2002. Real income is in 2005 euros

Table 4 Influence of share of foreigners at county level on perception of national share (ALLBUS 2006)

	West		West		East		East		Total		Total	
Share of foreigners in county	0.29*	(0.14)	0.56*	(0.16)	0.44	(0.29)	0.54	(0.37)	0.12	(0.1)	0.4*	(0.12)
Male			−5.3*	(0.82)			−3.5*	(0.94)			−5.5*	(0.62)
Age			−0.36*	(0.16)			−0.28	(0.2)			−0.21	(0.13)
$Age^2/100$			0.18	(0.16)			0.035	(0.2)			0.0076	(0.12)
Household size			0.92*	(0.41)			0.64	(0.56)			0.8*	(0.33)
Married			−0.014	(1.4)			−0.34	(1.6)			−0.27	(1)
Married but separated			−0.85	(2.8)			−0.22	(4.8)			−1.3	(2.4)
Divorced			0.69	(1.7)			1.3	(1.9)			0.11	(1.3)
Widowed			0.61	(2)			3.2	(2.4)			1.1	(1.6)
Intermediate schooling degree			−3.7*	(0.96)			−1.3	(1.3)			−2.2*	(0.75)
Abitur			−7.7*	(1)			−5.4*	(1.5)			−6.5*	(0.85)
Not working, unemployed			4.9*	(1.8)			0.2	(1.6)			1.4	(1.2)
Not working, other reasons			0.97	(1.1)			0.59	(1.5)			0.58	(0.89)
Works in public sector			0.62	(1.2)			−2.6	(1.7)			−1.2	(1)
Log household net income (month)			−2.7*	(0.91)			−2.2*	(1.1)			−3.1*	(0.68)
Constant	19*	(0.77)	54*	(7.1)	12*	(0.67)	43*	(8.7)	19*	(0.46)	55*	(5.4)
R^2	0.0027		0.18		0.0024		0.14		0.00056		0.17	
Observations	1652		1026		993		708		2491		1632	

Source: Own calculations based on ALLBUS 2006. The estimation results are based on the sample of German nationals only. Asymptotic standard errors are shown in parentheses. An asterisk denotes statistical significance at the 5% level. — The omitted reference categories are single, Hauptschule or no degree, working

Table 5 Cross-tabulations, by share of foreigners among the unemployed above/below median

Variable	Below median			Above median			All obs.			$P > \|t\|$
	Mean	SD	N	Mean	SD	N	Mean	SD	N	
County										
State responsible for financial security of unemployed	0.70	0.46	12941	0.62	0.48	13165	0.66	0.47	26106	8.8e-42
State responsible for job creation	0.44	0.50	12937	0.35	0.48	13172	0.39	0.49	26109	1.2e-48
Regional planning unit										
State responsible for financial security of unemployed	0.71	0.45	13102	0.62	0.49	13373	0.66	0.47	26475	4.5e-51
State responsible for job creation	0.44	0.50	13094	0.35	0.48	13379	0.39	0.49	26473	8.5e-50
Federal state										
State responsible for financial security of unemployed	0.72	0.45	13710	0.62	0.48	17163	0.67	0.47	30873	7.4e-72
State responsible for job creation	0.44	0.50	13701	0.36	0.48	17172	0.40	0.49	30873	1.1e-48

Note: GSOEP 1997 and 2002. 'Above median' refers to people who live in an area where the share of foreigners among the unemployed is above the median share. —The p-values are from t-tests for the statistical significance of the difference of the means between the two categories. The assumption of equal variances has been tested using Bartlett's χ^2. If the assumption is rejected, the t-test is conducted with an adjustment for unequal variances

Table 6 Full estimation results for random effects (RE) model. Region: county. Dependent variable: state responsibility for the financial security of the unemployed

	(1)		(2)		(3)		(4)		(5)	
Foreigners/100 unemployed	−0.0089*	(0.00054)	−0.0082*	(0.00055)	−0.0077*	(0.00055)	−0.0066*	(0.00057)	−0.0018*	(0.0007)
Male			−0.035*	(0.011)	−0.019	(0.011)	−0.021	(0.011)	−0.017	(0.012)
Age			−0.0018	(0.0022)	0.0008	(0.0023)	0.0034	(0.0023)	0.0032	(0.0024)
$Age^2/100$			0.0016	(0.0021)	−0.0017	(0.0022)	−0.0028	(0.0023)	−0.0031	(0.0023)
Household size			−0.0044	(0.0052)	−0.0039	(0.0052)	0.03*	(0.0058)	0.025*	(0.0061)
Married			−0.0086	(0.019)	−0.0003	(0.019)	0.015	(0.019)	0.024	(0.02)
Married but separated			−0.027	(0.042)	−0.021	(0.041)	−0.081	(0.043)	−0.065	(0.044)
Divorced			0.0071	(0.027)	0.013	(0.027)	−0.031	(0.027)	−0.018	(0.028)
Widowed			0.0066	(0.029)	0.021	(0.029)	−0.0056	(0.03)	−0.0008	(0.03)
Year = 2002			−0.04*	(0.01)	−0.036*	(0.01)	−0.0092	(0.011)	−0.0067	(0.011)
Intermediate schooling degree			−0.04*	(0.013)	−0.032*	(0.013)	−0.011	(0.014)	−0.039*	(0.014)
Abitur			−0.16*	(0.018)	−0.14*	(0.018)	−0.079*	(0.019)	−0.083*	(0.02)
College degree			−0.045*	(0.018)	−0.022	(0.018)	−0.0098	(0.019)	−0.038	(0.02)
Vocational degree			−0.01	(0.013)	−0.0093	(0.013)	−0.0028	(0.013)	−0.004	(0.013)
Not working, unemployed					0.18*	(0.023)	0.11*	(0.024)	0.096*	(0.025)
Not working, other reasons					0.045*	(0.014)	0.027	(0.015)	0.036*	(0.015)
Civil servant					−0.088*	(0.025)	−0.035	(0.026)	0.00027	(0.027)
Self-employed					−0.24*	(0.024)	−0.2*	(0.025)	−0.2*	(0.027)
Log household net income (month)							−0.15*	(0.013)	−0.13*	(0.014)
Owns residence							−0.093*	(0.012)	−0.068*	(0.012)
Worried about own finances							0.062*	(0.013)	0.048*	(0.013)
Worried about the economy							0.05*	(0.022)	0.05*	(0.023)
Lived in East in 1989									0.2*	(0.016)
Constant	4*	(0.0089)	4.2*	(0.052)	4.1*	(0.053)	5*	(0.11)	4.7*	(0.12)
R^2	0.011		0.021		0.03		0.043		0.05	
Observations	26106		25985		25967		24412		22769	

Asymptotic standard errors—robust to heteroscedasticity and serial correlation—are shown in parentheses. An asterisk denotes statistical significance at the 5% level. —The omitted reference categories are single, Hauptschule or no degree, working

Table 7 Full estimation results for fixed effects (FE) model. Region: county. Dependent variable: state responsibility for the financial security of the unemployed

	(1)		(2)		(3)		(4)		(5)	
Foreigners/100 unemployed	−0.0043	(0.0022)	−0.005*	(0.0022)	−0.0047*	(0.0022)	−0.004	(0.0023)	−0.004	(0.0023)
Age			−0.0058	(0.0098)	−0.0015	(0.0099)	0.00054	(0.011)	0.0026	(0.011)
$Age^2/100$			0.0014	(0.0094)	−0.0034	(0.0095)	−0.0043	(0.01)	−0.006	(0.01)
Household size			−0.0097	(0.02)	−0.012	(0.02)	−0.00015	(0.022)	0.0051	(0.023)
Married			−0.05	(0.066)	−0.062	(0.067)	−0.071	(0.069)	−0.11	(0.07)
Married but separated			0.034	(0.12)	0.0086	(0.12)	−0.001	(0.12)	−0.039	(0.13)
Divorced			−0.11	(0.11)	−0.12	(0.11)	−0.11	(0.12)	−0.14	(0.12)
Widowed			−0.17	(0.11)	−0.2	(0.11)	−0.19	(0.11)	−0.2	(0.11)
Intermediate schooling degree			−0.065	(0.052)	−0.067	(0.052)	−0.061	(0.054)	−0.084	(0.057)
Abitur			−0.14*	(0.067)	−0.14*	(0.068)	−0.14	(0.073)	−0.17*	(0.074)
College degree			−0.042	(0.07)	−0.036	(0.07)	0.016	(0.076)	0.041	(0.086)
Vocational degree			−0.036	(0.032)	−0.037	(0.032)	−0.033	(0.033)	−0.033	(0.034)
Not working, unemployed					0.068	(0.047)	0.058	(0.049)	0.069	(0.051)
Not working, other reasons					0.12*	(0.037)	0.1*	(0.039)	0.11*	(0.04)
Civil servant					0.23*	(0.12)	0.16	(0.12)	0.16	(0.12)
Self-employed					−0.033	(0.088)	−0.061	(0.093)	−0.079	(0.093)
Log household net income (month)							−0.049	(0.045)	−0.052	(0.046)
Owns residence							0.014	(0.043)	0.018	(0.045)
Worried about own finances							0.041	(0.031)	0.045	(0.032)
Worried about the economy							0.12*	(0.053)	0.12*	(0.055)
Constant	3.9*	(0.029)	4.4*	(0.24)	4.2*	(0.25)	4.4*	(0.39)	4.3*	(0.4)
R^2	0.00078		0.0042		0.007		0.0083		0.0093	
Observations	26106		25985		25967		24412		22769	

Asymptotic standard errors—robust to heteroscedasticity and serial correlation—are shown in parentheses. An asterisk denotes statistical significance at the 5% level. —The omitted reference categories are single, Hauptschule or no degree, working

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