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Moving Out of the Comfort Zone: How Cultural Norms Affect Attitudes toward Immigration

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Abstract

We examine how cultural norms shape attitudes toward immigration. Our causal identification relies on comparing students who moved across the East-West border after German reunification with students who moved within former East Germany. Students who moved from East to West became more positive toward immigration. Results are confirmed among students whose move was plausibly exogenous due to national study place allocation mechanisms. Evidence supports horizontal transmission as the difference between East-West movers and East-East movers increases over time and is driven by East German students who often interacted with fellow students. Effects are stronger in less xenophobic West German regions.

JEL-Codes: D720, D910, J150, J200, P200, P510, Z100.

Keywords: cultural transmission, migration, attitudes toward immigration, German division and unification, political socialization.

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1 Introduction

Cultural norms in society shape individuals’ political attitudes and behaviors (Bisin and Verdier, 2001, 2011; Tabellini, 2010). They are transmitted vertically and horizontally. Vertical transmission occurs from one generation to the next; horizontal transmission occurs through interactions with peers, such as fellow students and colleagues. However, such transmissions cannot be observed directly and are, therefore, difficult to study. An important aspect of a society’s cultural norms is its attitude to immigration. Due to declining birth rates, countries across the globe are increasingly relying on immigration to sustain their labor force. Despite the huge potential gains from migration, immigration remains one of the most polarizing topics in host countries (Guriev and Papaioannou, 2022). This paradox between economic gains and societal concerns points toward the importance of cultural norms that influence attitudes toward immigration (Alesina and Tabellini, 2023; Card et al., 2012). Attitudes of the local population, in turn, affect immigrant integration (Fouka, 2019; Jaschke et al., 2022; Aksoy et al., 2023). Uncovering how cultural norms in society and their transmission affect attitudes toward immigration can help to formulate policies that promote integration and reduce societal tensions.

In this paper, we investigate how cultural norms shape attitudes toward immigration. The German reunification provides a unique setting that enables us to examine how cultural norms were transmitted horizontally when students moved from former East Germany to former West Germany. The two parts of reunified Germany differed in their history and cultural norms. Citizens in East Germany had, for example, lower general trust and valued tolerance and respect less than citizens in West Germany (see Table A1 for differences in cultural variables following Tabellini (2010)). After reunification, the former East and West Germany shared the same institutions. Using representative survey data on German university students, we show that the culture students were exposed to during their studies influenced their attitudes toward immigration.

We start our analysis by establishing that attitudes toward immigration differ substantially between citizens in former East and West Germany, depending on the society they were socialized in. Citizens who grew up in the socialist German Democratic Republic (GDR, East Germany) were more likely to oppose immigration than citizens

socialized in West Germany (Carl, 2018; Lange, 2021). The legacy of state socialism is likely to have influenced attitudes toward immigration in three ways: out-group bias, trust, and relative lack of contact with immigrants. In theory, socialism should encourage international cooperation and friendship between peoples. In practice, however, socialism is associated with friend-foe patterns as well as in-group and out-group rhetoric (Domenach, 1951; Wolle, 1998). Second, socialism decreases trust toward other people and institutions (Bjørnskov, 2007; Rainer and Siedler, 2009; Brosig-Koch et al., 2011; Bjørnskov et al., 2014; Lichter et al., 2021; Nikolova et al., 2022). GDR citizens were used to espionage, which was predominantly performed by the secret police agency *Stasi* with a wide network of spies. Before reunification, about 189,000 East Germans spied on their fellow citizens as unofficial collaborators (Müller-Enbergs, 1996). Given East Germans’ fear of being spied on and the resulting lack of trust toward the out-group, concerns about strangers are likely. This particularly applies to immigrants who bring another culture with them. Indeed, our results show that East German students who lived under state socialism were more supportive of limiting immigration than West German students: 23.4 percent of students socialized in East Germany strongly agreed with limiting immigration, compared to 10.4 percent of students socialized in West Germany. Another mechanism is a historical relative lack of contact with immigrants in East Germany. Contact with immigrants and racial minorities has been found to promote more positive attitudes toward them in various settings around the world (Allport, 1954; Bazzi et al., 2019; Billings et al., 2021; Bursztyn et al., 2024).

We then examine how moving from East to West, which implies a major change in a student’s cultural environment, influences attitudes toward immigration. When estimating the effects of moving to the West, selection into treatment on both observable and unobservable factors needs to be addressed. Our identification strategy follows related studies that examine migration within Germany after reunification (Emmler and Fitzenberger, 2020; Boelmann et al., 2021; Jessen et al., 2023). We compare East-West movers both with East German students who stayed in their East German place of origin (stayers) and East German students who moved within East Germany to pursue their studies (East-East movers). Since East-East movers also made the decision to leave their familiar environment, they provide a better counterfactual than stayers, rationalizing a selection-on-observables approach. Therefore, we control for remaining observable differences between the two groups that likely correlate with both immigra-

tion attitudes and moving decisions. Finally, we employ the diagnostics proposed by [Oster \(2019\)](#) to gauge how large selection on unobservables must be to neutralize the estimated effects. Our baseline results show that students who moved from East to West Germany were about 7 percentage points less likely to strongly support limiting immigration than students who moved within East Germany. Importantly, we establish that the effects are driven by moving to a more migration-friendly cultural environment and not just by the act of moving. Effects are insignificant or much smaller when we look at East-East movers, West-West movers or movers in the opposite direction.

Our most demanding test for causal identification exploits quasi-exogenous variation in the decisions of the Central Agency for the Allocation of Study Places (ZVS). The ZVS was responsible for assigning students to universities in high-demand fields of study, such as medicine. Students were often unable to study these majors at the university of their choice. Therefore, the ZVS was also commonly mocked as the “Central Agency for the Deportation of Children”. Focusing on students whose applications were handled by the ZVS, our results corroborate the findings of the full sample. As the transmission of cultural norms may take some time, we test for experience effects. The results show that the longer students studied in West Germany, the less concerned they were about immigration relative to those students who moved within the East. This holds both when comparing all East-West movers with all East-East movers, and when restricting the analysis to the ZVS subsample.

We also examine the mechanisms by which cultural norms were transmitted ([Bisin and Verdier, 2001, 2011](#)). The survey data includes information on whether students were in frequent contact with fellow students. The results show that students socialized in East Germany who migrated to West Germany became more sympathetic to immigration if they often interacted with fellow students in West Germany. The attitudes of those who had little contact with other students changed only a little and the change was not statistically significant compared to students who migrated within former East Germany. This suggests that horizontal transmission of attitudes from other students is important. Contact with foreign students also promoted positive attitudes toward immigration. Taken together, these findings suggest that both horizontal transmission between students and contact with foreigners play an important role. Additional support for cultural transmission comes from studying students who migrated to an area with below-average or above-average hostility toward immigrants in the general pop-

ulation. Attitudes toward immigrants are clearly more positive among students who migrated from former East Germany to West German areas with below median hostility toward immigrants than among students who migrated from former East Germany to West German areas with above median hostility toward immigrants.

Attitudes toward immigration likely correlate with political preferences. Therefore, we investigate how cultural norms influence political preferences more generally. The results show that students socialized in East Germany who migrated to West Germany were less likely to support national-conservative positions than students socialized and educated in East Germany. In contrast, students socialized in East Germany who studied in West Germany were more likely to support Green Party positions than students socialized and educated in East Germany. Our findings corroborate that East-West cultural norms also shape broader political attitudes.

In sum, our results show that students from East Germany, who studied in West Germany were more positively disposed toward immigration than those who studied in East Germany. This transformability of attitudes may seem surprising but can be rationalized by the relatively young age of our focus group, which is in what is commonly referred to as their “impressionable years” (Mannheim, 1970; Krosnick and Alwin, 1989). This is a period of great mental plasticity during which the formation of preferences occurs. It is typically assumed to last until the age of 25. At a mean age of 22, our representative sample of students is in a period of their lives when attitudes are still malleable.

Contribution to the literature: We contribute to the literature in three ways. First, our study is related to the literature examining how cultural norms influence citizens’ attitudes and behaviors and how cultural norms change (e.g., Alesina and Fuchs-Schündeln (2007), Tabellini (2010), Alesina et al. (2013), Fernandez (2013), Friehe and Mechtel (2014), Becker et al. (2020), Jessen (2022)). In particular, Alesina and Fuchs-Schündeln (2007) found that East Germans are more in favor of state intervention than West Germans, especially among older cohorts. Most related to our paper, Boelmann et al. (2021) and Jessen et al. (2023) find that moving across the former border after German reunification had an asymmetric effect on prevailing cultural norms on female labor supply: West German women who were exposed to East German migrants or migrated themselves to former East Germany increased their labor supply, while East

German women continued higher labor supply even after migrating to former West Germany. Additional evidence that migrants can transfer their gender norms horizontally to the local population comes from Stalin’s World War II deportations. [Miho et al. \(2023\)](#) find that gender equality weakened in regions where the deportees were Muslims compared to regions where the deportees were Protestants. We add to the literature examining to what extent movers to a different cultural environment converge to its norms by comparing movers from East to West Germany to movers within former East Germany. This alleviates concerns that observed convergence by movers to the norms prevailing in their destination would reflect mover self-selection. We further address this concern in two ways: by analyzing convergence according to the time spent in the new cultural environment and by separately analyzing students in high-demand majors who often could not choose their university freely.

Second, we contribute to the literature examining predictors of attitudes toward immigration. These studies show, for instance, that high-skilled citizens are more supportive of immigration than low-skilled citizens ([Mayda, 2006](#); [Margaryan et al., 2021](#)). In particular, citizens have negative attitudes toward immigrants with competing labor market skills ([Facchini and Mayda, 2009](#)). Empirically, however, concerns about labor market competition are only weak predictors of immigration attitudes ([Hainmueller et al., 2015](#)). Immigration may also alter compositional amenities, i.e. the utility that natives derive from neighborhoods, schools, and workplaces, as it increases the chances of cultural conflict ([Card et al., 2012](#)). Concerns about these amenities could influence citizens’ attitudes toward immigration. Using British survey data, [Dustmann and Preston \(2007\)](#) find that welfare concerns are most likely to predict attitudes toward immigration but emphasize that culture may also play an important role due to cultural or racial prejudices. Such concerns appear to be stronger among Germans who were socialized in East Germany ([Carl, 2018](#); [Lange, 2021](#)). In this vein, we investigate whether moving to a different cultural environment alters individuals’ attitudes toward immigration. Comparing movers within a similar cultural environment and between different cultural environments allows us to distinguish the effect of moving from the effect of moving to a different cultural environment.

A third strand of literature relates to our mechanism of horizontal cultural transmission. This literature examines how general migration, student migration and labor migration influence citizens’ attitudes and voting in the country of origin. [Rapoport](#)

et al. (2021) show that migration in general gives rise to cultural convergence as migrants transfer cultural norms to their home country. More specifically, the prevalence of labor migration to the Western world decreased electoral support for the Communist Party in Moldova (Barsbai et al., 2017). Another prime example of cultural remittances shows that studying abroad has a positive effect on attitudes toward democracy in the students’ home countries (Spilimbergo, 2009). While these studies show how the cultural effects of migration are transmitted to non-migrants back home, our findings demonstrate how studying in a different place within the same country substantially affects the mover’s own attitudes.

Organization of the paper: The paper is organized as follows. Section 2 describes the data, followed by Section 3 that outlines the identification and the empirical model. Section 4 discusses the baseline results, while Section 5 examines the results for the subset of centrally allocated students. Section 6 shows robustness checks and Section 7 discusses contact with local and foreign students as a mechanism and shows further heterogeneities. Section 8 illustrates how our results on attitudes translate to political preferences. Section 9 concludes.

2 Data and descriptive statistics

2.1 Representative survey of German university students

To assess students’ attitudes toward immigration, we use the German Student Survey conducted by the Research Group on Higher Education at the University of Konstanz (Multrus, 2004, 2021). The survey has been sponsored by the German Federal Ministry of Education and Research. Since 1982, students at 25 universities have been asked to participate in this survey every two or three years. These 25 universities and universities of applied sciences were selected to ensure representativeness according to several characteristics, including a broad range of subjects, regional distribution throughout Germany and a certain minimum size. Students at these universities were randomly selected for the survey, whereby the size of the random sample was adjusted to the size of the university.¹ Each wave includes approximately 8,000 students. The pseudo-

¹More details about the survey can be found here: [Metadata of survey](#).

panel dataset is representative of German students regarding the distribution of basic attributes such as gender, age, and field of study (Multrus, 2004). In contrast to the main alternative data source, the DZHW Survey Series of School Leavers, the German Student Survey includes extensive information on students' attitudes. This data has been used, for example, to investigate students' political attitudes (Fischer et al., 2017; Lindov, 2020) as well as attitudes toward entrepreneurship and environmental policies (Falck et al., 2011; Kauder et al., 2018). We employ data for the three waves of the German Student Survey in the 1990s: the winter terms 1992/1993, 1994/1995 and 1997/1998.

We measure attitudes toward immigration via students' responses to two questions: "What do you think about the following political aims? Which ones do you support, and which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration of foreigners*." Students were asked to answer these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). In addition to this data, there is extensive background information about each student.

2.2 Defining East and West German socialization

The survey data specifies whether the students graduated from high school in East or West Germany. Students also indicate whether their parents finished their educational career in the GDR (East Germany) or the Federal Republic of Germany (West Germany). We code students as socialized in the GDR if they finished school in the GDR and their parents finished their educational career in the GDR. This information is only available in the 1990s. We restrict the sample to students aged 14 and up at the time of German reunification (about 94.8 percent of the sample). Citizens aged 14 have been shown to understand issues associated with immigration (Hooghe and Wilkenfeld, 2008). We exclude students who switched between East and West German universities (about 2.0 percent of the sample). We exclude students over 25 to ensure that students are in their impressionable years during their studies as well as students 15 or younger when they commenced their studies. This dataset then includes 14,594 (controlling subversion of national culture) and 14,654 (limiting immigration) students. About 24.8 percent of those students were socialized in East Germany.

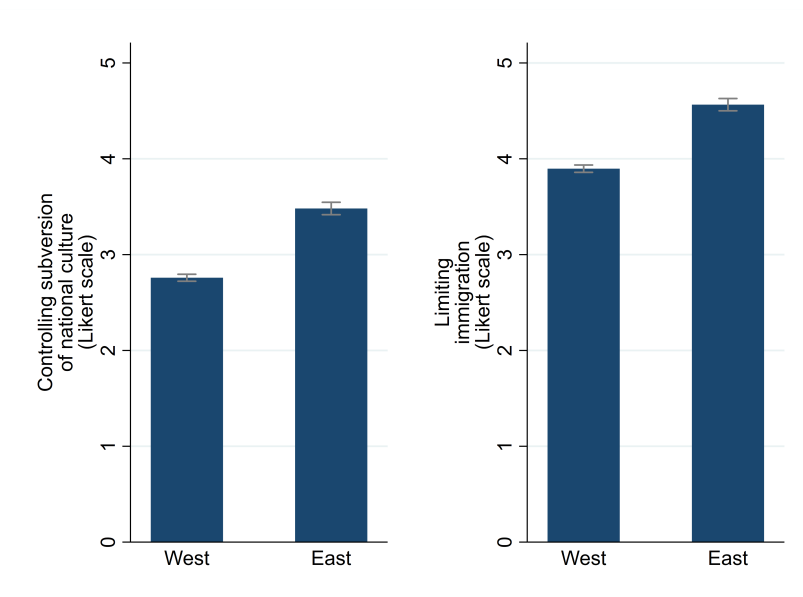
2.3 Attitudes toward immigration in East and West Germany

Our data shows that students socialized in East Germany want politicians to contain the subversion of national culture and to limit immigration to a much larger extent (3.5 and 4.6 points on a scale from 1 to 7) than students who grew up in West Germany (2.8 and 3.9 points on a scale from 1 to 7). The differences in means are statistically significant at the one percent level, and they are numerically large (Panel (a) in Figure 1). If normalizing these variables to have mean zero and standard deviation one, then the difference in means is 0.38 for the subversion of national culture and 0.35 for limiting immigration. The distributions of reported immigration attitudes also differ drastically between these two groups of students (Panel (b) in Figure 1). For example, 24.3 percent of students socialized in East Germany strongly disagreed with the controlling subversion of national culture as opposed to 36.1 percent of students socialized in West Germany. Similarly, 23.4 (10.4) percent of the students socialized in East (West) Germany strongly supported restricting foreign immigration. Using Chi-squared tests, we reject the null hypothesis that the distribution of ticking individual categories regarding immigration does not differ between students who were socialized in East and West Germany ($p = 0.000$ for both items). Those differences in our representative sample of students are perfectly in line with the differences between East and West German citizens as a whole (see Table A2).

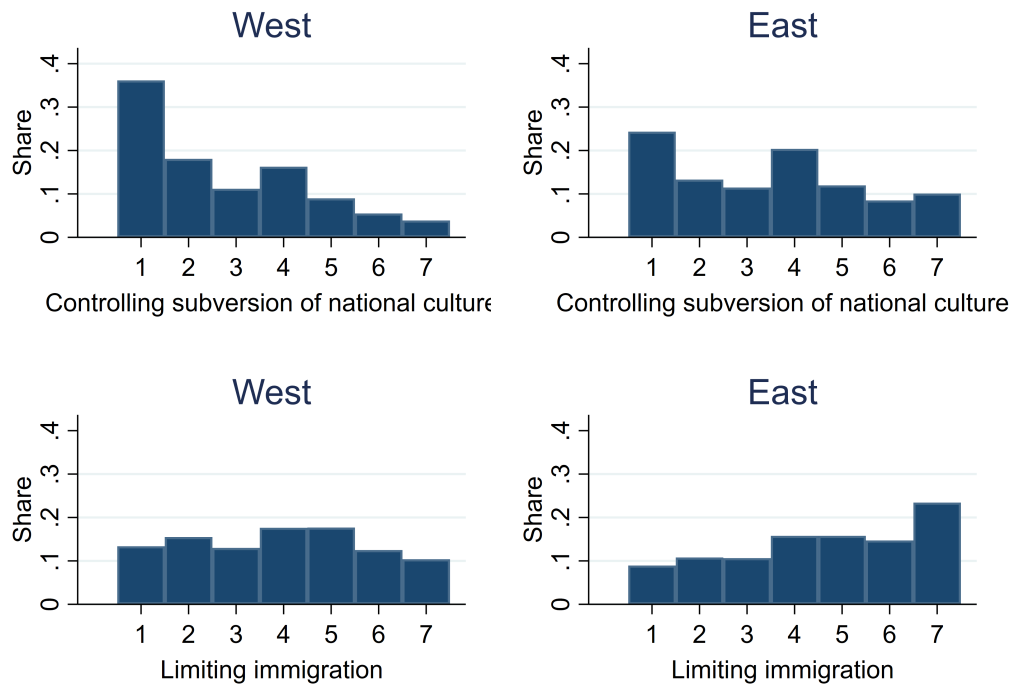
These descriptive statistics portray unconditional correlations between having been socialized under socialism and attitudes toward immigration. Appendix A presents results based on an analysis that controls for students' socio-demographic characteristics (e.g. age and gender), university fixed effects, and wave fixed effects. It corroborates that students who grew up in East Germany were indeed much more concerned about immigration than those who grew up in West Germany (see also Carl (2018) and Lange (2021)). Appendix Figures A1 and A2 show the average marginal effects of having lived under socialism. Having lived under socialism increases support for limiting immigration in a linear fashion. As for the political goal of controlling the subversion of national culture, students who lived under socialism are much less likely to strongly disagree with it.

Figure 1 Students who grew up in the East were much more concerned about immigration

(a) Average Differences between West and East



(b) Differences in the Distribution between East and West



Notes: Panel (a) shows students' mean responses with 95 percent confidence intervals and panel (b) the distribution to the questions: "What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*. Students were asked to answer these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). Students socialized in East Germany were much more concerned about immigration than students who grew up in West Germany.

3 Empirical Strategy:

Comparing East-West movers and East-East movers

3.1 Identification and descriptives

Having established that East and West Germans have different attitudes toward immigration, we examine how students' moving from East to West Germany influences these views. We compare students who moved from East to West (a) with students who did not leave their home in East Germany (stayers) and (b) with students who moved within East Germany to pursue their studies at a different location than their hometown (East-East movers). This strategy follows [Ham et al. \(2011\)](#) and [Emmler and Fitzenberger \(2020\)](#). Using East-East movers as a counterfactual for East-West movers accounts for the possibility that students who decided to migrate have other characteristics than those who never left their hometown.

Overall, all movers constitute 9,776 of observations for the question on controlling subversion of national culture (9,813 for the question on limiting immigration). 2,816 of those were socialized in East Germany (2,829 for limiting immigration). 2,546 (2,557) of the 2,816 (2,829) students studied in East Germany, 270 (272) studied in West Germany.

We examine the extent to which socio-demographic characteristics of East-West movers, stayers, and East-East movers differ (Table 1). East-West movers do not statistically differ from stayers and East-East movers regarding gender. The share of males among students who migrated from East to West Germany is 0.52 (column 1); the shares among stayers and East-East movers are 0.48 and 0.49 (columns 2 and 3). East-West movers were on average 22.11 years old, stayers were 22.06 and East-East movers 22.25 years old. These differences are small and do not turn out to be statistically significant. The share of married students is 0.03 among East-West movers, 0.05 among stayers and 0.03 among East-East movers and thus does not differ statistically. Similarly, the share of students with children is not statistically different between East-West movers and East-East movers and East-West movers and stayers. (Male) students who moved to the West and those who moved within East Germany and those that stayed in their hometown did military service in similar numbers. East-West movers and East-East movers had comparable school final grades (1.74 and 1.80

GPA scores on a scale from 1.0 to 5.0 with 1.0 being the best possible grade), though the final school grades of stayers were somewhat worse (1.83). East-East movers had studied, however, about half a semester longer than East-West movers at the time of the survey. This difference is statistically significant at the one percent level. We also use information on whether students considered the reputation of the university and distance from home when deciding whether to move from East to West Germany, move within East Germany, or stay in their hometown. The results show that both East-West movers (2.73 on a scale from 0 to 6) and East-East movers (2.87) considered the tradition and reputation of the university to be more important than stayers (2.50). In contrast, stayers rated personal contact with friends/acquaintances (3.63) and regional proximity to their hometown (4.88) as much more important than East-West movers (2.89 and 3.59) and East-East movers (2.51 and 3.65). In a similar vein, financial considerations were much more important for stayers (4.31) than for East-West movers (3.39) and East-East movers (2.92) when deciding where to study. Overall, East-East movers are a better counterfactual than stayers ([Emmler and Fitzenberger, 2020](#)). We proceed therefore by comparing East-West movers and East-East movers, excluding students who did not leave their home region to attend university.

3.2 Econometric model

To examine whether moving from East to West Germany reduced skepticism toward immigration we estimate a model of the following form:

$$Immigration\ attitude_i = \alpha + \beta\ EastWestMover_i + \sum_l \epsilon_l X_{il} + \sum_t w_t + u_i,$$

with $i \in \{1, \dots, 2,816 \text{ or } 2,829\}$; $l \in \{1, \dots, 7\}$; $t \in \{1, 2, 3\}$

The dependent variable *Immigration attitude* describes the attitude of student i regarding immigration as measured by support for controlling the subversion of national culture and limiting immigration. The main explanatory variable is *East-West Mover*, which assumes the value one when the individual student migrated from East to West Germany. The vector X includes control variables likely to be correlated with the moving decision (see [Table 1](#)) and potentially with students' attitudes toward immi-

Table 1 Observable characteristics of East-West movers, stayers and East-East movers. Comparison of means.

| | (1) East-West movers | (2) Stayers | (3) East-East Movers | t-test (1)-(2) | t-test (1)-(3) |
|--|-------------------------|----------------|-------------------------|-------------------|-------------------|
| Male | .516 | .481 | .487 | .035 | .029 |
| Age | 22.114 | 22.061 | 22.246 | .053 | -.133 |
| Married | .029 | .047 | .032 | -.018 | -.003 |
| Children | .026 | .042 | .042 | -.017 | -.016 |
| High school GPA | 1.740 | 1.827 | 1.796 | -.087 ** | -.056 * |
| Semester | 4.897 | 4.983 | 5.421 | -.085 | -.524 *** |
| Military service | .232 | .213 | .263 | .018 | -.031 |
| Tradition and reputation of the university | 2.732 | 2.500 | 2.871 | .232 | -.139 |
| Personal contacts with friends/acquaintances | 2.890 | 3.634 | 2.506 | -.744 *** | .385 |
| Regional proximity to home town | 3.585 | 4.881 | 3.648 | -1.295 *** | -.062 |
| Financial considerations | 3.390 | 4.308 | 2.915 | -.918 *** | .475 * |
| Controlling subversion of national culture | 3.126 | 3.364 | 3.556 | -.238 * | -.430 *** |
| Limiting immigration | 4.162 | 4.380 | 4.666 | -.218 | -.504 *** |
| Observations | 270 | 796 | 2546 | | |

Notes: The table shows the sample means of students' observable characteristics such as gender and age of East-West movers, stayers and East-East movers. GPA is measured on a scale from 1.0 to 5.0 with 1.0 being the best possible grade. East-West movers are students who were socialized in East Germany and moved to West Germany to study at a university. We compare the East-West movers to (a) students who did not leave their home in East Germany (stayers) and (b) students who moved within East Germany to pursue their studies at a different location than their hometown (East-East movers). Overall, East-East movers are a better counterfactual than stayers.

*** Significant at the 1 percent level,

** Significant at the 5 percent level,

* Significant at the 10 percent level

gration.² We include seven dummy variables (indicated by l) for gender, students' age and semester as well as for being married, having children, having done military service, and students' grade point average (GPA) in high school. GPA is measured on a scale from 1.0 to 5.0 with 1.0 being the best possible grade. Three wave fixed effects are also included since students' attitudes toward immigration may well vary over time. u_i is an error term. We use an ordered probit estimator because the dependent variables assume values on an ordinal scale. Table A3 shows descriptive statistics of the individual variables.

To obtain unbiased estimates, the following identifying assumption must be satisfied: Conditional on the observed differences between East-West movers and East-East movers, the East-West mover status is unrelated to any third factor that may influence immigration attitudes. As both East-West movers and East-East movers leave their familiar environment to pursue their studies, they are likely to share many personal characteristics. The difference is that the East-West movers move to West Germany whereas the latter move within East Germany. Thus, the identifying assumption is likely to be fulfilled. We further corroborate this conjecture in Section 6 using a battery of robustness checks and in Section 5 by focusing on a more narrow group of students who were allocated to a university through a centralized admissions agency.

4 Results

4.1 Baseline

Table 2 shows our baseline results. The parameter estimate of the *East-West Mover* variable has the expected negative sign indicating that students who migrated from East to West Germany became less skeptical about immigration than students who studied in East Germany. We will turn to the numerical meaning of the marginal effects below.

The coefficient estimates of the control variables suggest that male students were

²Related studies such as Mayda (2006), Dustmann and Preston (2007), Facchini and Mayda (2009), Card et al. (2012), Hainmueller et al. (2015) show that socio-demographic variables such as gender and age correlate with attitudes toward immigration. Male students are, for example, likely to be more concerned about immigration than female students because men tend to hold more rightist positions than women (see, for example, Lott and Kenny, 1999).

somewhat less opposed to immigration than female students when we measure attitudes toward immigration by controlling the subversion of national culture. At the same time, students who did military service were more skeptical about immigration than students who did not do it. As only men were subject to conscription, these results suggest, taken together, that men who did military service did not differ in their attitudes toward controlling the subversion of national culture from women, while men who did not do military service were less likely to agree with it. In terms of limiting immigration, men who did not do military service and women had similar views, and men who did military service supported a more restrictive immigration policy. Older students were less likely to oppose immigration than younger ones. Students with bad GPAs were more skeptical about immigration than students with good ones. To evaluate the magnitude of the effect, Table B1 shows the coefficients from OLS regressions when the dependent variables are standardized to a mean of zero and a standard deviation of one.

The marginal effects of the *East-West Mover* variable are shown in Figure 2. The dependent variables assume values between 1 (most positive toward immigration) and 7 (most negative toward immigration). The figure shows the marginal effects of migrating from East to West Germany for the individual values of the dependent variable. For example, Figure 2 shows that students who migrated from East to West Germany were 3.96 percentage points less likely to strongly agree (6.63 percentage points more likely to strongly disagree) with controlling subversion of national culture than students who did not migrate from East to West Germany but moved within East Germany. These marginal effects are numerically large: 11.28 (31.95) percent of the students who migrated from East to West Germany ticked the category “strongly agree” (“strongly disagree”) (see Appendix Figure B1).

An OLS model with attitude variables standardized to mean zero and standard deviation one shows that East-West movers have 0.22 to 0.24 standard deviations more positive attitudes toward immigration than East-East movers (Appendix Table B1). To put this into perspective, the difference between East-West movers and East-East movers is somewhat bigger than the gap associated with a difference between a very good GPA (1.0) and a satisfactory GPA (3.0).

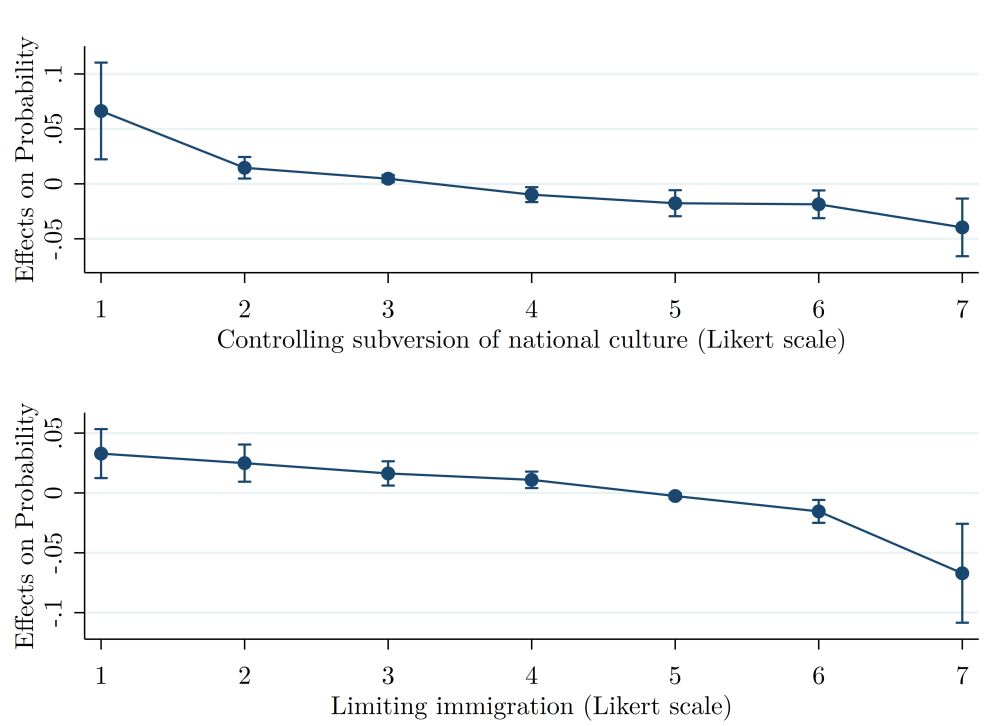
Table 2 Regression results, baseline model. Ordered probit model

| | (1) | (2) | (3) | (4) |
|--------------------|---|-----------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.227*** (-3.17) | -0.217*** (-2.95) | -0.242*** (-3.54) | -0.219*** (-3.18) |
| Male | | -0.115** (-2.10) | | -0.00312 (-0.06) |
| Age | | -0.0512*** (-3.04) | | -0.0489*** (-2.84) |
| Semester | | 0.0188* (1.81) | | 0.0137 (1.30) |
| Married | | 0.0431 (0.36) | | 0.130 (1.04) |
| Children | | -0.186 (-1.54) | | -0.183 (-1.56) |
| High school GPA | | 0.0922** (2.24) | | 0.117*** (2.85) |
| Military service | | 0.123** (2.01) | | 0.271*** (4.63) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2816 | 2744 | 2829 | 2757 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. GPA is measured on a scale from 1.0 to 5.0 with 1.0 being the best possible grade.

- *** Significant at the 1 percent level,
- ** Significant at the 5 percent level
- * Significant at the 10 percent level

Figure 2 Baseline model, marginal effects



Notes: The figure reports the marginal effects of the *East-West Mover* variable. The upper figure refers to controlling subversion of national culture. The lower figure refers to limiting immigration. Marginal effects are reported for the seven individual values the dependent variables assume. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). Results are based on Table 2, columns (2) and (4). Whiskers indicate 95 percent confidence intervals.

4.2 Experience effects

Transmitting cultural norms may well take some time. Our baseline model considers students from the first to the last semester of their studies. First-semester students had a much smaller chance of being influenced by West German cultural norms than, for example, students in the seventh semester (we do not consider students who switched universities within their studies). We therefore expect that the effect of migrating to West Germany becomes larger, the longer students have studied in West Germany. Table 3 suggests that this is indeed the case. When we use attitudes toward *Controlling subversion of national culture* as the dependent variable, the parameter estimate of the *East-West Mover* variable is -0.217 including all students and -0.292 only considering students studying in at least the 7th semester. The parameter estimate is admittedly the largest (-0.310) for students studying in at least the 3rd semester. When we use attitudes toward *limiting immigration* as the dependent variable, the parameter estimate of the *East-West Mover* variable is -0.219 including all students, -0.269 only considering students studying in at least the 3rd semester, -0.279 only considering students studying in at least the 5th semester, and -0.358 only considering students studying in at least the 7th semester.

Appendix Table B2 presents a corresponding analysis of experience effects using an OLS model. The difference in attitudes between East-West movers and East-East movers increases by half over time. For attitudes toward controlling subversion of national culture the increased change takes place quickly and is there already from the third semester onward, while for attitudes toward limiting immigration the change is more gradual.

Table 3 Experience effects, regression results. Ordered probit model

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| | Controlling subversion of national culture | | | | Limiting immigration | | | |
| Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=7 |
| East-West Mover | -0.217*** (-2.95) | -0.310*** (-3.78) | -0.290*** (-2.97) | -0.292** (-2.24) | -0.219*** (-3.18) | -0.269*** (-3.52) | -0.279*** (-2.93) | -0.358*** (-2.82) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2744 | 2369 | 1800 | 1113 | 2757 | 2378 | 1805 | 1113 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in the first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8).

*** Significant at the 1 percent level,

** Significant at the 5 percent level

5 Exploiting quasi-exogenous variation: The ZVS

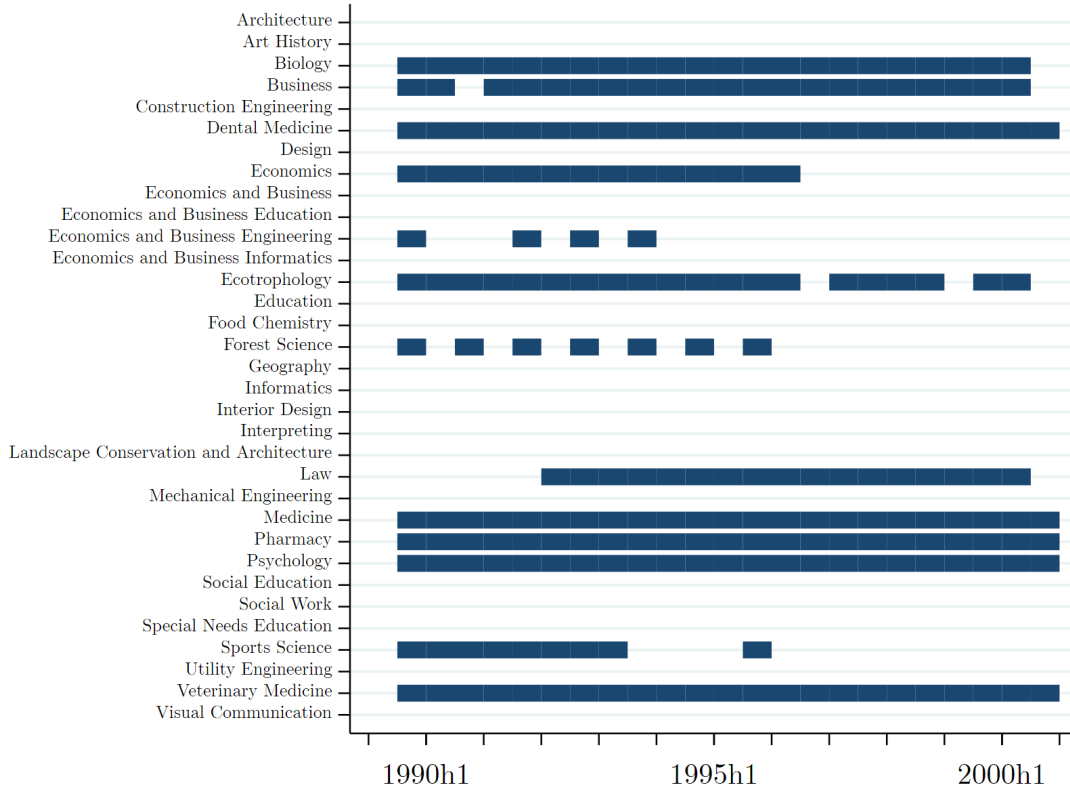
To corroborate our findings, we exploit quasi-exogenous variation in whether students studied in East or West Germany: For example, medical students could not freely choose at which university they would study. The ZVS administered the applications for studying medicine and other fields for certain periods of time (see Figure 3).

The admissions process carried out by the ZVS was described as a “lottery” (Ratgeber, 2009). It was clearly not a pure lottery. However, the ZVS influenced students’ places of study to a great deal. Students were asked to submit priority lists of universities they wished to study at. Which university students were assigned to by the ZVS depended on multiple factors, including the students’ GPA and the number of semesters they had already waited to begin their studies (e.g., did military service or gained work experience). Remaining slots could be filled by the respective universities according to their preferred criteria, which could entail additional requirements such as grades in specific subjects. For example, studying medicine was extremely competitive. In some years, even students who had a final school grade of 1.0 (the best grade that students could achieve), were not placed at their first choice. The ZVS decided where each student was offered a study place. We estimate our models for those students whose field of study was subject to ZVS decisions in the 1990s (Figure 3). Doing so mitigates further concerns about selection into moving West as applicants had only imperfect control over where they studied.

One may still be concerned that students’ preferences influenced the priority lists and, in turn, the place of study significantly. There is also the concern that the ZVS admissions hardly gave rise to quasi-exogenous sorting of the place of study. Scholars have examined the ZVS’s admissions data. Investigating its matching algorithm and alternative mechanisms to assign students to their places of study, the results of Braun et al. (2010); Westkamp (2013); Braun et al. (2014) show that the ZVS did not assign the places of study to students in an ideal manner. Recent evidence also demonstrates that students possess only incomplete information about their preferred university (Grenet et al., 2022), giving rise to further idiosyncrasies in the assignment process.

Our ZVS sample includes 349 (*controlling subversion of national culture*) and 352 (*limiting immigration*) students who moved within the East or from East to West Germany. Among the 349 (352) students, 50 (51) students migrated from East to West

Figure 3 Fields of study administered by the ZVS



Notes: The blue bars indicate the semesters the German Central Agency (ZVS) administered the applications for individual fields of study for specific periods in the 1990s. For example, the ZVS was in charge of assigning biology and medical students to universities during the entire observation period. The ZVS was in charge of assigning law students to universities between 1993 and 1999. In contrast, the ZVS was not in charge of assigning architecture or geography students to universities.

Germany. When we compare means in attitudes toward immigration, ZVS students socialized in East Germany who studied in West Germany supported controlling subversion of national culture and limiting immigration to a much lesser extent (3.1 and 4.3 points on a scale from 1 to 7) than students who both were socialized and who studied in East Germany (3.8 and 4.9 points on a scale from 1 to 7). The differences in means are statistically significant at the five percent level, and they are numerically large as in the full sample.

The regression results in Table 4 corroborate our baseline results: East German students assigned to study at a West German university were less skeptical toward immigration than students who studied in East Germany. When we use attitudes toward

controlling subversion of national culture as the dependent variable, the parameter estimate of the *East-West Mover* variable is -0.200 including all students, -0.323 only considering students studying in at least the 3rd semester, -0.636 only considering students studying in at least the 5th semester and -0.918 only considering students studying in at least the 7th semester. Wald tests show that the parameter estimate -0.200 in column (1) differs statistically from the parameter estimate -0.918 in column (4) with a p-value of 0.06. Similarly, when we use attitudes toward *limiting immigration* as the dependent variable, the estimated East-West mover coefficient is monotonously becoming more negative, the more we focus on the students studying in West Germany for longer periods.

Appendix Table B3 presents a corresponding analysis of experience effects using an OLS model. The difference in attitudes between East-West movers and East-East movers increases even more strongly over time than among all students, analyzed in Appendix Table B2. Even though ZVS estimates are noisier due to smaller sample size, they strongly suggest that students who were quasi-exogenously assigned to be East-West movers rather than East-East movers became more positive toward immigration over time.

Table 4 Experience effects, regression results, ZVS sample. Ordered probit model

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|-------------------|----------------------|----------------------|-------------------|---------------------|-------------------|---------------------|
| | Controlling subversion of national culture | | Limiting immigration | | | | | |
| Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=7 |
| East-West Mover | -0.200 (-1.15) | -0.323 (-1.60) | -0.636** (-2.52) | -0.918*** (-2.66) | -0.199 (-1.18) | -0.370** (-2.08) | -0.370 (-1.53) | -0.746** (-2.14) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 349 | 296 | 204 | 132 | 352 | 298 | 205 | 132 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in the first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8). The ZVS decided at which university and individual student got an offer to study.

*** Significant at the 1 percent level,

** Significant at the 5 percent level

6 Robustness tests

We examine the robustness of the results in several ways. First, we vary estimation techniques and the set of control variables to ensure that our results are not sensitive to these choices. We perform jackknife tests to rule out that our results are driven by students from particular universities. Next, we check results for students who internally migrate within East Germany or within West Germany as well as from West to East Germany and show that our coefficients become much smaller or insignificant if we look at West to East movers. We also analyze the remaining potential for selection on unobservables. Finally, we vary the definition of cultural socialization and show that the results hold.

Estimation techniques. First, inferences do not change when we estimate the model by Ordinary Least Squares (OLS) instead of employing the ordered probit estimator (Appendix Tables [B1-B2](#)). Second, we use binary dependent variables and employ a standard probit estimator. We use dummy variables as the dependent variables that assume the value one when respondents strongly disagree or disagree with controlling the subversion of national culture and limiting immigration. Alternatively, we use dependent variables that assume the value one when respondents strongly agree and agree on the individual questions. Doing so does not change the inferences regarding the effects of migrating between East and West Germany (Appendix Tables [C1-C4](#)).

Control variables. We test whether inferences change when we include dummy variables for the students' fields of study. The questionnaire distinguishes between eight fields of study: humanities, social sciences, law, economics, medicine, engineering, natural sciences, and other subjects. The results show that humanities and social sciences students are more positively disposed toward immigration than students in other fields of study. Inferences regarding the baseline effects do not change when further control variables are included (Appendix Tables [C5-C6](#)). This extension comes at the potential cost of adding endogenous variables as students can switch between fields of study. Hence, we use these controls as a robustness check, rather than adding them to our main specification.

We also investigate the robustness of our results to excluding the control variable military service. In the 1990s in Germany, only men were subject to conscription. In

our dataset, 39 percent of men did military service. Therefore, the male dummy in our baseline regression captures the gender difference for men who did not do military service and the sum of the male and military dummy captures the gender difference for men who did military service. Table C7 replicates our main result Table 2 without the control for military service. Our effects of interest are almost identical. The coefficient for the male dummy changes as expected as it now covers also men who did military service.

Dropouts. Some students might drop out from their studies and we do not observe them anymore in higher semesters. As we do not have individual level panel data, we cannot directly analyze dropouts. However, we can include the grades during the first two years of university as a proxy of dropping out. Results hold when we exclude those with grades worse than 3.5 or with the grade “fail”. Results also hold, when we put in the grades as an additional control variable, see Appendix Table C8.

Jackknife tests. We investigate whether including/excluding students from an individual university drives our results. To do so, we run our model by excluding students from an individual university at a time (jackknife tests). However, our results in Appendix Tables C9-C10 show that inferences do not change when students from an individual university are included/excluded.

Within East and within West Movers and West-East Movers. One analysis that corroborates our results is a comparison of our main effects with the effects when moving within East Germany or within West Germany. In both cases, students do not move to a different culture that is more positive toward immigration. Thus their attitudes should not change as a result of moving within West Germany or within East Germany compared to students who did not move. Appendix Figure B2 indeed shows that all effects are much weaker and mostly insignificant for moves that do not imply a cultural change. Therefore we can be confident that the change in attitude is not due to the act of moving but due to the act of moving to a different culture. Appendix Figure B3 shows that effects are insignificant for the ZVS sample when looking at East-East movers versus stayers within East or within West Germany. This again shows that our main effects cannot only be explained by the act of moving but by the act of moving

to a different cultural environment. In addition, we look at students who migrated from West to East Germany. They also changed their cultural environment but in the opposite direction. Again, effects are much weaker and mostly insignificant as shown in Appendix Figure B4. One has to keep in mind, however, that West-East movers are a very selected group as it was very uncommon to move from the West to the East to study (2.9 percent of students from the West moved to the East, versus 7.25 percent that moved to the West) and the largest group are medicine students that did not get a study place in the West. [Jessen et al. \(2023\)](#) also find evidence for asymmetric changes in attitudes in the context of movement between West and East Germany.

Selection on unobservables. We employ the techniques proposed by [Oster \(2019\)](#) to assess how large selection on unobservables must be to neutralize the estimated effects. The results show that *delta* ([Oster, 2019](#)), the ratio measuring the impact of selection-on-unobservables compared to selection-on-observables, is by far larger than one. This indicates that unobservables are unlikely to “explain away” the effect of East/West movement on the students’ attitudes toward immigration.

Cultural socialization. In our baseline model, we defined the *East-West Mover* variable as including only students who were 14 or older when Germany was reunified. Inferences do not change when we define *Lived under socialism* as including only students who were at least 13 or at least 15 years old (Appendix Tables D1-D4). In the baseline model, we code students as socialized in the GDR if they finished school in the GDR and their parents finished their educational career in the GDR. We also code students as socialized in the GDR when just one parent finished their educational career in the GDR or when they finished school in West Germany and the parents finished their educational career in the GDR. Inferences do not change (Appendix Tables D5-D8). The effects do become much weaker, however, when we code students as socialized in the GDR when they finished school in the GDR but their parents finished their educational career in West Germany (Appendix Tables D9-D10). This result is reassuring for our main finding as we would expect that students with parents socialized in West Germany experience a smaller cultural change when migrating to the West.

7 Mechanisms

To dig deeper into the mechanisms, we examine how contact between movers and other students is influencing the results. We then check under which conditions the effects are particularly strong. First, we examine the extent to which cultural norms are likely to be transmitted horizontally between students. Horizontal transmission of cultural norms occurs between peers within a generation. For example, fellow students tell other students about their work ethic, or they collaborate when completing assignments and preparing for exams.

Our dataset includes information about whether students spend time with fellow students. Information about contact with other students is available in a fine-grained manner: students were asked whether and how much they are in contact with students in general and foreign students.

We disentangle effects for students who are often in contact with fellow students in general or foreign students. Students socialized in East Germany who migrated to West Germany became even more supportive of immigration when they interacted with fellow students in West Germany often (Table 5). In contrast, East-West movers who were not often in contact with their fellow students were not more accepting of immigration than East-East movers. The *East – West mover* variable is much smaller and statistically insignificant when we focus on students who are not often in contact with fellow students.

Contact with foreign students promotes the positive baseline effects of East-West movement on attitudes toward immigration to a large extent as Table 5 shows. This evidence supports the contact hypothesis suggesting that living in close contact reduces prejudices between majority and minority groups (Allport, 1954). As the difference in attitudes between students who have much vs. little contact with other students in general is bigger than the difference between students who have much vs. little contact with foreign students, horizontal cultural transmission between German students clearly plays an important role.

Besides these variations in the contact with students and foreign students in particular, one can look more broadly at heterogeneous effects according to regional characteristics. Table 6 shows how results differ in regions with income, unemployment and hostility above and below the median. Overall the results are stronger in wealthier

Table 5 Regression results, mechanisms: contact with students and foreign students. Ordered probit model. Coefficient estimates of the East-West Mover variable

| | (1) | (2) | (3) | (4) |
|-------------------------|---|---------------------|--------------------------|--------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| | much contact with ... | little | much contact with ... | little |
| <u>Students</u> | | | | |
| East-West Mover | -0.305*** (-3.38) | -0.0875 (-0.68) | -0.295*** (-3.46) | -0.0942 (-0.82) |
| Control variables | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2138 | 645 | 2146 | 650 |
| <u>Foreign students</u> | | | | |
| East-West Mover | -0.247* (-1.95) | -0.180** (-1.98) | -0.310*** (-2.64) | -0.144* (-1.71) |
| Control variables | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 788 | 1956 | 791 | 1966 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is East-East movers within East Germany. We disentangle the extent to which students had much/little contact with other students (panel 1) and much/little contact with other foreign students (panel 2).

*** Significant at the 1 percent level,
 ** Significant at the 5 percent level,
 * Significant at the 10 percent level

and economically stronger regions. Our estimated coefficient is always negative but is stronger in areas where income is above the median and unemployment is below the median. When it comes to unemployment, it is important to note that our main effects are always significantly negative in all four cases. Even in regions with high unemployment, students are more favorable toward immigration after their move to the West.

Therefore our effects are unlikely to be driven only by economic considerations.

The third part of Table 6 corroborates our evidence for the transmission of cultural norms as an underlying mechanism. Attitudes toward foreigners also varied within the West and we would expect stronger transmission effects in regions that are less hostile toward foreigners (because the absolute difference between East and West is larger) and weaker effects in areas that are above the median in their hostility toward foreigners (because the absolute difference between East and West is smaller). The table shows that the estimated overall effect of migrating to regions with different levels of hostility in the West varies in exactly this way. East-West movers who move to regions where the measured hostility against immigrants is below the median also adopt attitudes that are less hostile toward immigrants.³ This suggests that horizontal transmission takes place not only between students but also between students and the general population in the city where they live.

³The data on income, unemployment and hostility toward immigrants at the municipality level is coming from the German Socio Economic Panel (GSOEP), a representative panel survey of the German population. To measure hostility toward immigrants, we use the share of people that answers “very concerned” to the following question: “How concerned are you about hostility toward foreigners or minorities in Germany?”.

Table 6 Regression results, heterogeneity: Income, unemployment, and xenophobia

| | (1) | (2) | (3) | (4) |
|-------------------------------------|---|---|----------------------|----------------------|
| | Controlling subversion of national culture | Controlling subversion of national culture | Limiting immigration | Limiting immigration |
| | Below median | Above median | Below median | Above median |
| <u>Income in 1996</u> | | | | |
| East-West Mover | -0.182 (-0.82) | -0.242*** (-2.93) | -0.124 (-0.61) | -0.233*** (-2.98) |
| Controls | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 1662 | 1082 | 1670 | 1087 |
| <u>Unemployment in 1996</u> | | | | |
| East-West Mover | -0.378*** (-2.52) | -0.234*** (-2.69) | -0.446*** (-2.99) | -0.237*** (-2.90) |
| Controls | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 892 | 1276 | 896 | 1285 |
| <u>Hostility against immigrants</u> | | | | |
| East-West Mover | -0.373** (-2.56) | -0.135 (-1.58) | -0.413*** (-2.84) | -0.127 (-1.61) |
| Controls | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 1103 | 1641 | 1111 | 1646 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We disentangle the extent to which students attended a university in an area with below/above median income (panel 1), below/above unemployment (panel 2) and hostility (panel 3). These measures come from the German Socio-economic panel and are measured at the municipality level.

*** Significant at the 1 percent level,

** Significant at the 5 percent level

8 Political preferences

Attitudes toward immigration are very likely correlated with political preferences.⁴ Our results describing how moving from East to West Germany influences attitudes toward immigration may therefore translate into more general patterns about how cultural norms influence political preferences. The German Student Survey also provides information about students' attitudes toward national-conservative, Christian-conservative, liberal-democratic, social-democratic, green, and communist-Marxist political positions. The attitudes toward Christian-conservative, liberal-democratic, social-democratic, and green political positions correspond with the positions advocated by the four political parties represented in the German national parliament for decades: the Christian-conservative CDU/CSU, the liberal-democratic FDP, the social-democratic SPD and the Green Party. National-conservative and communist-Marxist positions correspond to far-right and far-left parties.

Students were asked to express their support toward the individual political positions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). Appendix Table A5 shows descriptive statistics. We use the support toward the individual political positions as the dependent variable and regress them on our main explanatory variable *East-West Mover*, socio-demographic controls and wave fixed effects.

The results in Table 7 show that students socialized in East Germany who migrated to West Germany were less likely to support national-conservative positions than students who were socialized and who studied in East Germany. The point estimates of the *East-West Mover* variable are statistically significant at the one percent level. In contrast, students socialized in East Germany who studied in West Germany were more likely to support green positions than students who were socialized and who studied in East Germany. These effects are statistically significant at the five percent level. Overall, the results corroborate expectations about how East/West cultural norms influence political attitudes. East German citizens were not used to the established democratic

⁴Immigration has been shown to increase support for far-right voting in a number of countries (see [Otto and Steinhardt \(2014\)](#) for Germany, [Halla et al. \(2017\)](#) for Austria, and [Edo et al. \(2019\)](#) for France). [Mayda et al. \(2022\)](#) find that in the United States, low-skilled immigration increases and high-skilled immigration reduces support for Republicans. Also, unemployment and crimes of immigrants are likely to influence voter sentiment ([Epstein and Hillman \(2003\)](#); [Couttenier et al. \(2021\)](#)).

parties as West German citizens were. The GDR was also promoting nationalist propaganda. This was very likely to increase support for national-conservative positions in East Germany after the German unification.

Table 7 Regression results, political preferences. Ordered probit model

| | (1) National- conservative | (2) Christian- conservative | (3) Liberal- democratic | (4) Social- democratic | (5) Green | (6) Communist- marxist |
|--------------------|----------------------------------|-----------------------------------|-------------------------------|------------------------------|-----------------------|------------------------------|
| East-West Mover | -0.236*** (-2.92) | -0.0747 (-1.12) | -0.105 (-1.60) | 0.0358 (0.56) | 0.139** (2.03) | 0.0303 (0.42) |
| Male | -0.0391 (-0.64) | 0.217*** (4.12) | -0.0609 (-1.10) | -0.0471 (-0.90) | -0.279*** (-5.28) | -0.270*** (-4.99) |
| Age | -0.0436** (-2.34) | -0.0547*** (-3.26) | -0.0332** (-1.97) | -0.0212 (-1.27) | 0.0612*** (3.77) | 0.0184 (1.09) |
| Semester | -0.00277 (-0.25) | -0.0112 (-1.10) | -0.00288 (-0.28) | 0.0230** (2.27) | -0.0312*** (-3.04) | 0.00593 (0.58) |
| Married | -0.0513 (-0.35) | 0.101 (0.83) | -0.0459 (-0.40) | 0.379*** (2.96) | -0.0769 (-0.62) | 0.0235 (0.19) |
| Children | -0.313** (-2.12) | -0.324*** (-2.85) | -0.320*** (-2.95) | -0.0435 (-0.38) | 0.163 (1.57) | 0.259** (2.17) |
| High school GPA | 0.210*** (4.63) | -0.0545 (-1.30) | -0.0511 (-1.24) | -0.0340 (-0.81) | -0.0932** (-2.22) | -0.0403 (-0.97) |
| Military service | 0.196*** (2.78) | 0.106* (1.79) | 0.132** (2.14) | -0.00581 (-0.10) | -0.0646 (-1.08) | 0.00794 (0.13) |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2735 | 2746 | 2739 | 2743 | 2740 | 2741 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences political preferences. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. The dependent variables show answers to the questions: “When you describe your political attitudes overall, to which extent do you agree and disagree with the following political attitudes?: *National-conservative*, *Christian-conservative*, *Liberal-democratic*, *Social-democratic*, *Green* and *Communist-Marxist*?”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. GPA is measured on a scale from 1.0 to 5.0 with 1.0 being the best possible grade.

*** Significant at the 1 percent level,

** Significant at the 5 percent level,

* Significant at the 10 percent level

9 Conclusion

Addressing skepticism toward immigration is a major challenge for policymakers facing declining birth rates and shortages of skilled labor. Despite its economic benefits, immigration remains one of the most controversial topics in the public debate. This poses questions about where attitudes toward immigration come from and whether they can change. We explore students moving from East to West Germany after reunification to shed light on these questions. After reunification, Germans face a common institutional environment with free mobility. At the same time, divergence during German division meant that migrants within newly reunified Germany moved to a vastly different cultural environment.

To distinguish the causal effect of moving to a different cultural environment on attitudes toward immigration from general differences between movers and stayers, we compare East German students who moved to West Germany with students who moved within East Germany. This helps us to address self-selection effects as students in both groups decided to leave their familiar environment. To minimize concerns about endogenous sorting between universities in East and West, our most demanding specification exploits quasi-exogenous assignment of students to universities in high-demand subjects by the German Central Agency for the Allocation of Study Places (ZVS). Ideal for our purpose, the assignment process left students with little control over their study destination.

We find that students' attitudes toward immigration are shaped by their cultural environment. Students who moved to West Germany were around 7 percentage points less likely to strongly support limiting immigration than students who moved within East Germany. Averaging the effects over the whole distribution and normalizing attitude measures to mean 0 and standard deviation of 1, East-West movers were on average about 0.2 standard deviations more positive toward immigration than otherwise similar East-East movers. In line with the presumption that the transmission of cultural norms takes time, the magnitude of the effect increases with the duration of their studies. The effect is stronger for students who often interact with fellow students in West Germany, indicating the importance of horizontal transmission of cultural norms (among peers). It is also stronger when students interact more with foreign students, providing evidence for the contact hypothesis.

Additional evidence on convergence to local cultural norms comes from studying the effects of hostility toward immigrants among the general population. East-West movers to cities with below-median hostility are clearly more positive toward immigrants than East-West movers to cities with above-median hostility. Also, local economic conditions matter, with students migrating to cities with lower unemployment and higher incomes being more positive toward immigrants.

We further estimate the effect of East-West movement on political preferences. Consistent with previous findings, East-West movers were less likely to support national conservative positions than students who stayed in East Germany. Hence, cultural norms may well explain why the rightwing *AfD* enjoys much more support in East Germany today. While policymakers can hardly change cultural norms, they can facilitate exposure to other cultures and more tolerant cultural norms. Exchange programs have, for instance, been shown to significantly affect students' attitudes ([Spilimbergo, 2009](#); [Cahilkova, 2015](#)). Identifying policies that reach beyond the student population will be an important task for future research.

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Appendix

Moving out of the comfort zone: Cultural norms and attitudes toward immigration

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A Attitudes in East and West Germany

Table A1 Cultural Differences between East and West Germany

| | West Germany | East Germany | Difference East-West |
|-----------------------|------------------|------------------|-----------------------|
| General trust | 0.418 (0.494) | 0.250 (0.433) | -0.168*** (-7.990) |
| Control over life | 7.321 (1.884) | 6.577 (2.080) | -0.744*** (-8.271) |
| Tolerance and respect | 0.909 (0.288) | 0.857 (0.350) | -0.052*** (-3.584) |
| Obedience | 0.106 (0.309) | 0.142 (0.349) | 0.036** (2.381) |
| Observations | 968 | 979 | |

Notes: The table shows the means (standard deviations in brackets) of cultural values in West (column 1) and East (column 1) Germany as measured in the WWS in wave 3 in 1997. We used the following questions to measure general trust: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?", Control over life: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "none at all" and 10 means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out.", Tolerance and respect and obedience: "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five. Answer option: Tolerance and respect for other people, Obedience. Column 3 shows their difference and the t-statistic in brackets.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

Table A2 Differences in attitudes toward immigrants between East and West Germany

| | West Germany | East Germany | Difference East-West |
|-----------------------------------|------------------|------------------|------------------------|
| Openness to immigration | 0.133 (0.340) | 0.078 (0.268) | -0.056*** (-4.013) |
| Openness to immigration if jobs | 0.554 (0.497) | 0.317 (0.465) | -0.237*** (-10.861) |
| Place strict limits | 0.260 (0.439) | 0.492 (0.500) | 0.232*** (10.872) |
| Prohibit immigration | 0.026 (0.159) | 0.102 (0.303) | 0.076*** (6.951) |
| Immigrants not liked as neighbors | 0.043 (0.204) | 0.099 (0.299) | 0.056*** (4.798) |
| Observations | 968 | 979 | |

Notes: The table shows the means (standard deviations in brackets) of attitudes toward immigrants in West (column 1) and East (column 2) Germany as measured in the WVS in wave 3 in 1997. We used the following questions: “How about people from other countries coming here to work. Which one of the following do you think the government should do?” Variable “Openness to immigration”: Share of people who answer “1. Let anyone come who wants to”; Variable “Openness to immigration if jobs”: Share of people who answer “2. Let people come as long as there are jobs available”; Variable “Place strict limits”: Share of people who answer “3. Place strict limits on the number of foreigners who can come here”; Variable “Prohibit immigration”: Share of people who answer “4. Prohibit people coming here from other countries”; and the question: “On this list are various groups of people. Could you please sort out any that you would not like to have as neighbors?” Variable “Immigrants not liked as neighbors”: Share of people who answer “Immigrants/foreign workers”. Column 3 shows their difference and the t-statistic in brackets.

*** Significant at the 1 percent level.

Table A3 Descriptive statistics

| | Obs | Mean | SD | Min | Max | Obs lived under socialism | Mean under socialism | SD | Obs did not live under ... | Mean | SD |
|--|-------|--------|-------|-----|-----|---------------------------------|-------------------------|-------|-------------------------------|--------|-------|
| Controlling subversion of national culture | 12655 | 2.960 | 1.874 | 1 | 7 | 3507 | 3.485 | 1.986 | 9148 | 2.759 | 1.790 |
| East-West Mover | 12655 | 0.021 | 0.143 | 0 | 1 | 3507 | 0.076 | 0.265 | 9148 | 0.000 | 0.000 |
| East-East Mover | 12655 | 0.196 | 0.397 | 0 | 1 | 3507 | 0.707 | 0.455 | 9148 | 0.000 | 0.000 |
| Male | 12655 | 0.570 | 0.495 | 0 | 1 | 3507 | 0.490 | 0.500 | 9148 | 0.601 | 0.490 |
| Age | 12655 | 22.741 | 1.660 | 18 | 25 | 3507 | 22.200 | 1.761 | 9148 | 22.948 | 1.572 |
| Semester | 12655 | 5.371 | 2.905 | 1 | 12 | 3507 | 5.299 | 2.815 | 9148 | 5.399 | 2.939 |
| Married | 12655 | 0.023 | 0.149 | 0 | 1 | 3507 | 0.035 | 0.183 | 9148 | 0.018 | 0.133 |
| Children | 12655 | 0.024 | 0.153 | 0 | 1 | 3507 | 0.040 | 0.196 | 9148 | 0.018 | 0.132 |
| High school GPA | 12655 | 2.163 | 0.648 | 1 | 5 | 3507 | 1.795 | 0.511 | 9148 | 2.304 | 0.639 |
| Military service | 12655 | 0.221 | 0.415 | 0 | 1 | 3507 | 0.251 | 0.434 | 9148 | 0.210 | 0.407 |
| Lived under socialism | 12655 | 0.277 | 0.448 | 0 | 1 | 3507 | 1.000 | 0.000 | 9148 | 0.000 | 0.000 |
| Studied in East Germany | 12655 | 0.276 | 0.447 | 0 | 1 | 3507 | 0.924 | 0.265 | 9148 | 0.028 | 0.164 |
| Limiting immigration | 12703 | 4.082 | 1.931 | 1 | 7 | 3524 | 4.566 | 1.970 | 9179 | 3.896 | 1.884 |
| East-West Mover | 12703 | 0.021 | 0.144 | 0 | 1 | 3524 | 0.076 | 0.265 | 9179 | 0.000 | 0.000 |
| East-East Mover | 12703 | 0.196 | 0.397 | 0 | 1 | 3524 | 0.706 | 0.456 | 9179 | 0.000 | 0.000 |
| Male | 12703 | 0.570 | 0.495 | 0 | 1 | 3524 | 0.490 | 0.500 | 9179 | 0.600 | 0.490 |
| Age | 12703 | 22.740 | 1.660 | 18 | 25 | 3524 | 22.197 | 1.760 | 9179 | 22.948 | 1.571 |
| Semester | 12703 | 5.369 | 2.903 | 1 | 12 | 3524 | 5.291 | 2.813 | 9179 | 5.400 | 2.936 |
| Married | 12703 | 0.023 | 0.149 | 0 | 1 | 3524 | 0.035 | 0.184 | 9179 | 0.018 | 0.133 |
| Children | 12703 | 0.024 | 0.153 | 0 | 1 | 3524 | 0.040 | 0.197 | 9179 | 0.018 | 0.132 |
| High school GPA | 12703 | 2.163 | 0.647 | 1 | 5 | 3524 | 1.796 | 0.511 | 9179 | 2.304 | 0.639 |
| Military service | 12703 | 0.221 | 0.415 | 0 | 1 | 3524 | 0.251 | 0.434 | 9179 | 0.209 | 0.407 |
| Lived under socialism | 12703 | 0.277 | 0.448 | 0 | 1 | 3524 | 1.000 | 0.000 | 9179 | 0.000 | 0.000 |
| Studied in East Germany | 12703 | 0.276 | 0.447 | 0 | 1 | 3524 | 0.924 | 0.265 | 9179 | 0.028 | 0.164 |

Table A4 Regression results, East German students were more skeptical about immigration than West German students

| | (1) | (2) | (3) | (4) |
|--------------------------|---|-----------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| Lived under socialism | 0.390*** (7.53) | 0.410*** (7.64) | 0.327*** (6.62) | 0.364*** (7.15) |
| Male | | -0.0534** (-2.32) | | 0.0478** (2.17) |
| Age | | -0.0448*** (-5.33) | | -0.0423*** (-5.11) |
| Semester | | 0.00203 (0.44) | | 0.00600 (1.32) |
| Married | | 0.0691 (1.04) | | 0.114 (1.63) |
| Children | | -0.162** (-2.29) | | -0.209*** (-3.11) |
| High school GPA | | 0.0892*** (5.25) | | 0.0947*** (5.74) |
| Military service | | 0.251*** (9.49) | | 0.331*** (12.90) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| University fixed effects | Yes | Yes | Yes | Yes |
| Observations | 12911 | 12655 | 12960 | 12703 |

Notes: The table reports the results of our empirical model on how living under socialism influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *Living under socialism* variable assumes the value one when the individual grew up in East Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8).

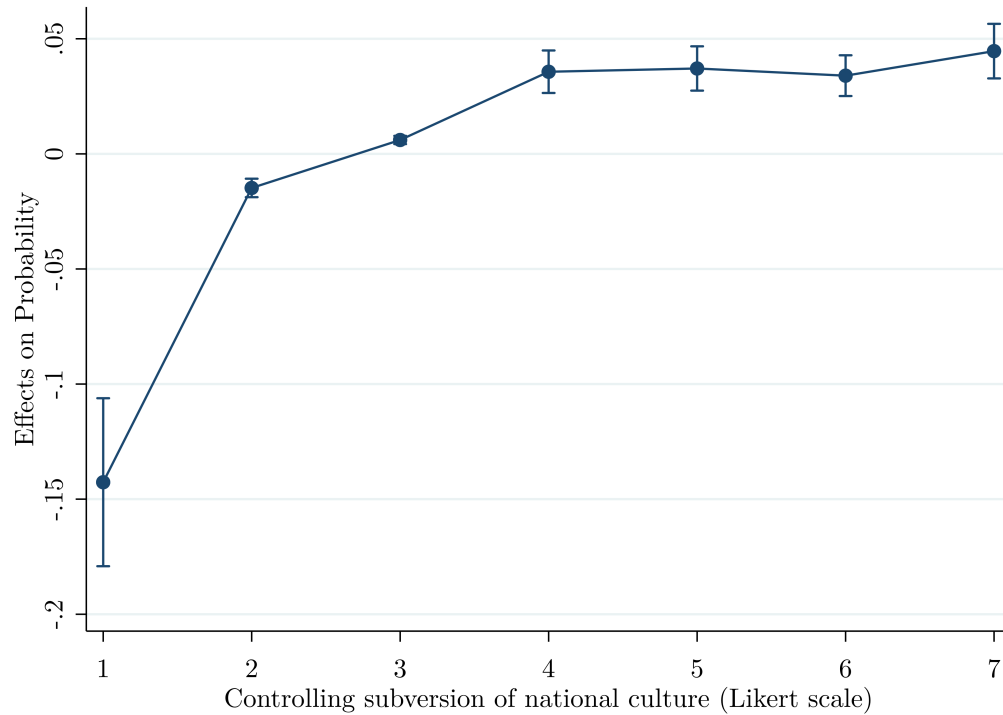
*** Significant at the 1 percent level,

** Significant at the 5 percent level

Table A5 Descriptive statistics of political attitudes

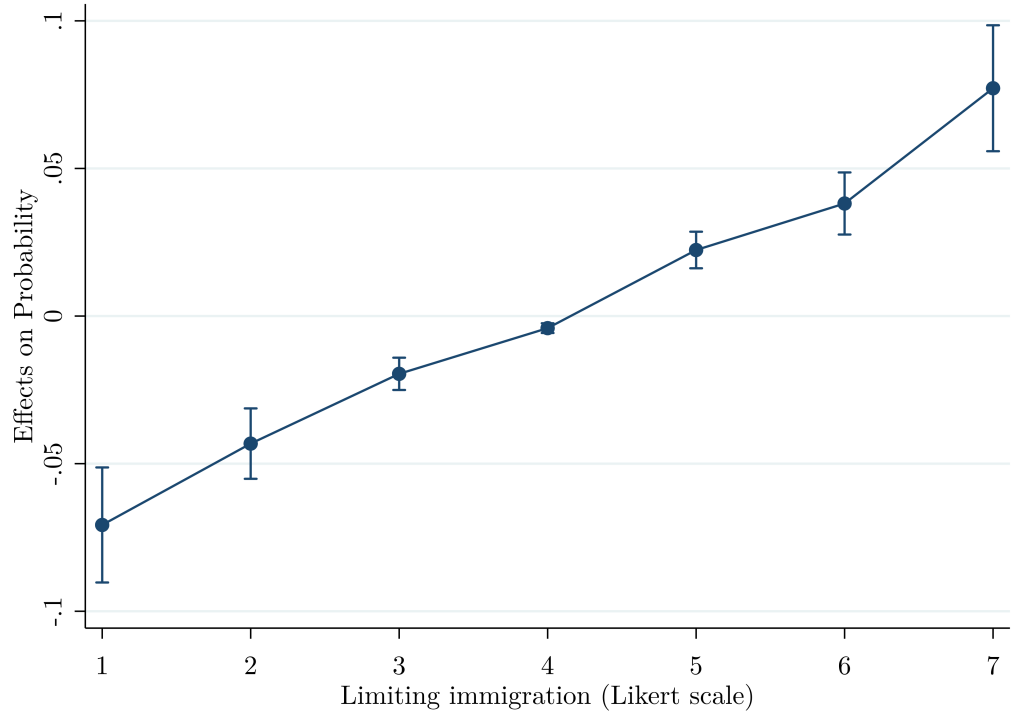
| | Obs | Mean | SD | Min | Max | Obs | Mean | SD | Obs | Mean | SD |
|------------------------|------|-------|-------|-----|-----|-----|----------|-------|-----------|--------|-------|
| | | | | | | | Migrants | | East-East | Movers | |
| National-conservative | 2735 | 1.884 | 1.373 | 1 | 7 | 266 | 1.680 | 1.253 | 2469 | 1.906 | 1.384 |
| Christian-conservative | 2746 | 2.870 | 1.721 | 1 | 7 | 267 | 2.854 | 1.676 | 2479 | 2.872 | 1.726 |
| Liberal-democratic | 2739 | 3.575 | 1.520 | 1 | 7 | 267 | 3.408 | 1.495 | 2472 | 3.593 | 1.522 |
| Social-democratic | 2743 | 4.427 | 1.422 | 1 | 7 | 267 | 4.468 | 1.341 | 2476 | 4.422 | 1.431 |
| Green | 2740 | 4.535 | 1.504 | 1 | 7 | 264 | 4.693 | 1.511 | 2476 | 4.518 | 1.503 |
| Communist-marxist | 2741 | 3.273 | 1.786 | 1 | 7 | 267 | 3.311 | 1.891 | 2474 | 3.269 | 1.775 |

Figure A1 Average marginal effects of ‘lived under socialism’ – *Controlling subversion of national culture*



Notes: The figure shows the marginal effects of the variable *Lived under socialism* when we use students’ attitudes toward controlling subversion of national culture as the dependent variable in Table A4, column (2): students socialized in East Germany were much more concerned about foreign infiltration than students socialized in West Germany. We evaluate marginal effects at every individual value of the dependent variable. Whiskers indicate 95 percent confidence intervals. For example, students who lived under socialism were 4.46 percentage points more likely to strongly agree (14.26 percentage points less likely to strongly disagree) with controlling subversion of national culture than students who did not live under socialism. The likelihood of strongly agreeing (strongly disagreeing) with controlling subversion of national culture was 80 percent higher (43 percent lower) among students who lived under socialism than among students who did not live under socialism.

Figure A2 Average marginal effects of ‘lived under socialism’ – *Limiting immigration*



Notes: The figure shows the marginal effects of the variable *Lived under socialism* when we use students’ attitudes toward limiting immigration as the dependent variable in Table A4, column (4): students socialized in East Germany were much more concerned about restricting immigration than students socialized in West Germany. We evaluate marginal effects at every individual value of the dependent variable. Whiskers indicate 95 percent confidence intervals. For example, students who lived under socialism were 7.72 percentage points more likely to strongly agree (7.08 percentage points less likely to strongly disagree) with restricting immigration of foreigners than students who did not live under socialism. The likelihood of strongly agreeing (strongly disagreeing) with limiting immigration was 55 percent higher (58 percent lower) among students who lived under socialism than among students who did not live under socialism.

B Attitudes toward immigration among movers and stayers

Table B1 Regression results, baseline model. OLS with standardized dependent variables

| | (1) | (2) | (3) | (4) |
|--------------------|---|------------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.231*** (0.0684) | -0.222*** (0.0700) | -0.237*** (0.0676) | -0.225*** (0.0679) |
| Male | | -0.0506 (0.0445) | | 0.126*** (0.0427) |
| Age | | -0.0480*** (0.0164) | | -0.0392** (0.0163) |
| Semester | | 0.0202** (0.0102) | | 0.0127 (0.0100) |
| Married | | 0.0541 (0.119) | | 0.137 (0.116) |
| Children | | -0.179 (0.114) | | -0.172 (0.110) |
| High school GPA | | 0.0935** (0.0413) | | 0.0912** (0.0389) |
| Constant | 0.246*** (0.0347) | 1.130*** (0.332) | 0.263*** (0.0391) | 0.833** (0.330) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2816 | 2749 | 2829 | 2762 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an OLS model with standardized dependent variables with mean zero and standard deviation one. Robust standard errors are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student moved from East to West Germany. The counterfactual are movers within East Germany.

*** Significant at the 1 percent level,

** Significant at the 5 percent level

Table B2 Experience effects, regression results. OLS with standardized dependent variables

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|-----------------------|----------------------|
| | Controlling subversion of national culture | | Limiting immigration | | | | | |
| | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| | >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 |
| East-West Mover | -0.217*** (0.0700) | -0.303*** (0.0765) | -0.291*** (0.0924) | -0.298** (0.124) | -0.211*** (0.0674) | -0.256*** (0.0752) | -0.268*** (0.0927) | -0.333*** (0.122) |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2744 | 2369 | 1800 | 1113 | 2757 | 2378 | 1805 | 1113 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an OLS model with standardized dependent variables to mean zero and standard deviation one. Robust standard errors are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8).

*** Significant at the 1 percent level,

** Significant at the 5 percent level

Table B3 Experience effects, regression results, ZVS Sample. OLS with standardized dependent variables

| | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | | (7) | | (8) | |
|--|----------|-----|----------|-----|-----------|-----|-----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|
| | Semester | >=1 | Semester | >=3 | Semester | >=5 | Semester | >=7 | Semester | >=1 | Semester | >=3 | Semester | >=5 | Semester | >=7 |
| Controlling subversion of national culture | | | | | | | | | | | | | | | | |
| East-West Mover | -0.205 | | -0.311* | | -0.593*** | | -0.877*** | | -0.188 | | -0.330** | | -0.298 | | -0.627* | |
| | (0.160) | | (0.181) | | (0.219) | | (0.303) | | (0.156) | | (0.167) | | (0.233) | | (0.325) | |
| Wave fixed effects | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| Observations | 349 | | 296 | | 204 | | 132 | | 352 | | 298 | | 205 | | 132 | |

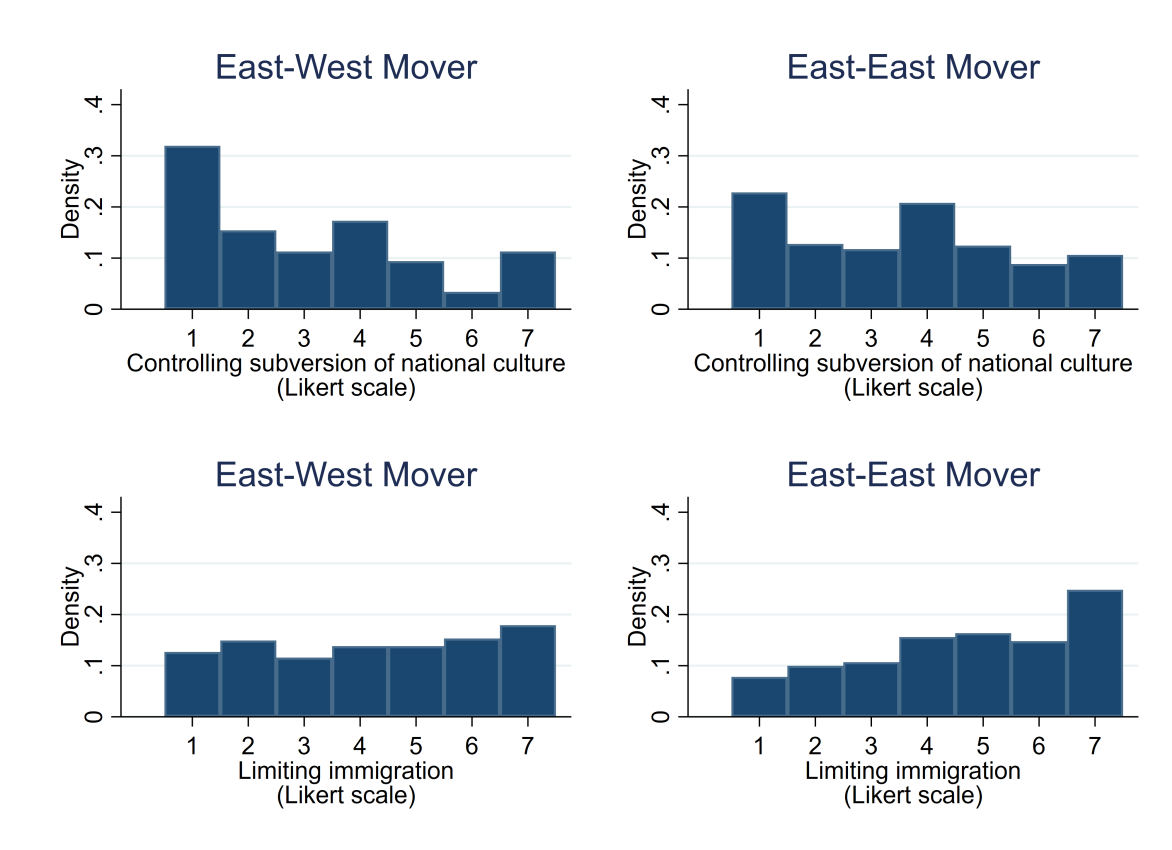
Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an OLS model with standardized dependent variables to mean zero and standard deviation one. Robust standard errors are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: "What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*". Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8).

*** Significant at the 1 percent level,

** Significant at the 5 percent level

* Significant at the 10 percent level

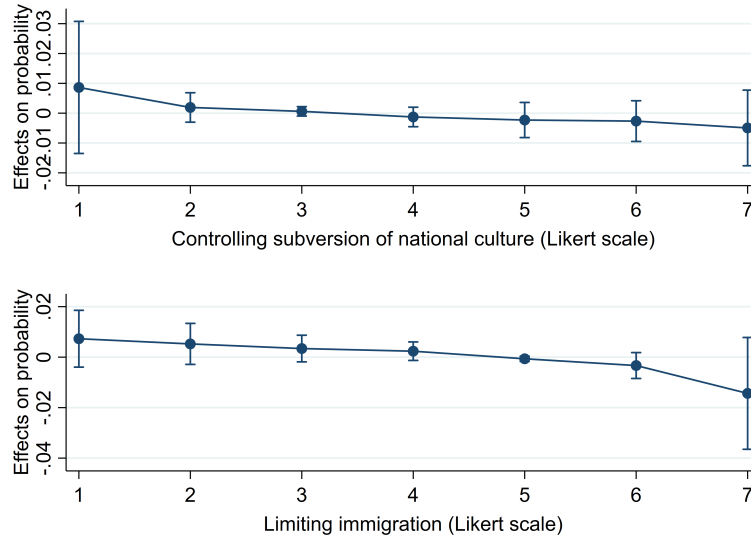
Figure B1 East-East movers were much more concerned about immigration than East-West movers



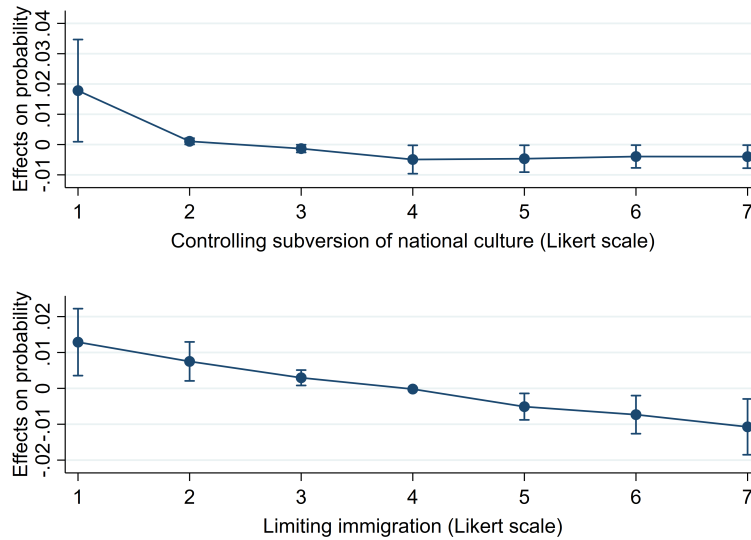
Notes: The figure shows the distribution of students' attitudes on controlling subversion of national culture (upper panels) and limiting immigration (lower panels): students who moved within East Germany were much more concerned about immigration than students who migrated to West Germany.

Figure B2 Baseline model, marginal effects, Within Movers vs. Stayers

(a) East-East Movers vs. Stayers



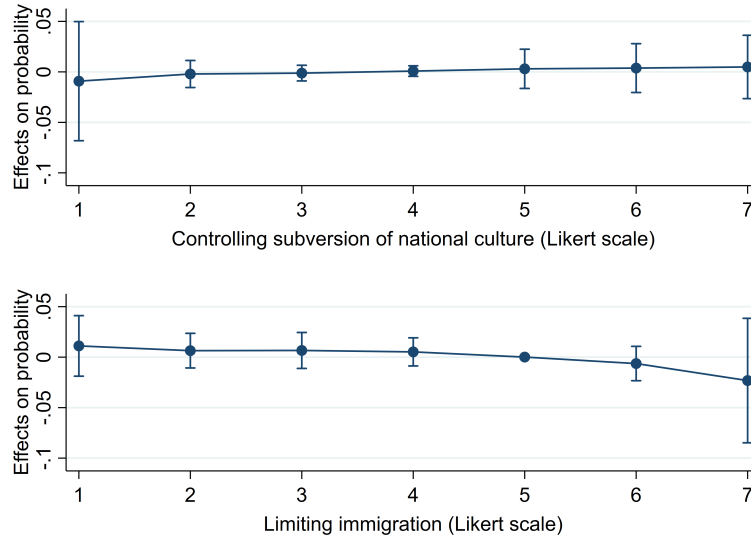
(b) West-West Movers vs. Stayers



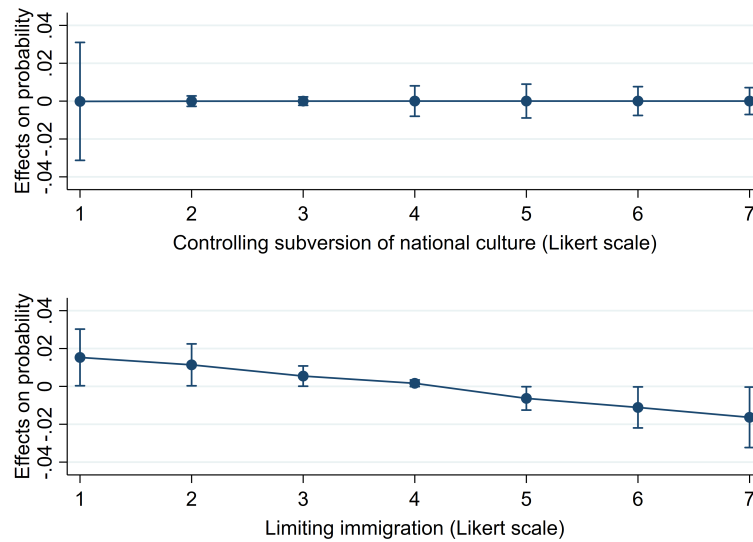
Notes: The figure reports the marginal effects of moving within East or West Germany compared to staying in East Germany. The upper part in each subfigure refers to controlling subversion of national culture. The lower part refers to limiting immigration. Marginal effects are reported for the seven individual values the dependent variables assume. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). Results are comparable to Figure 2. Whiskers indicate 95 percent confidence intervals.

Figure B3 Baseline model, marginal effects, Within Movers vs. Stayers, ZVS sample

(a) East-East Movers vs. Stayers

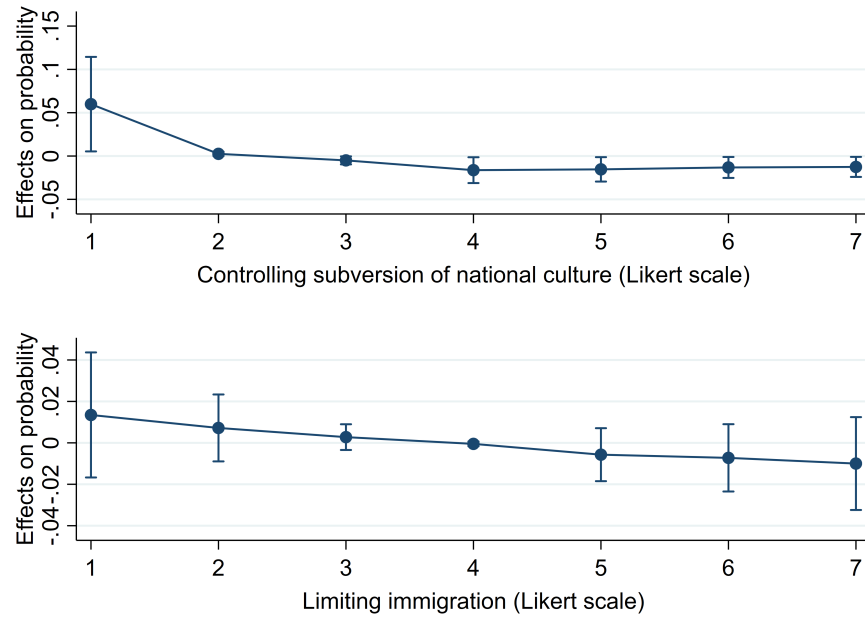


(b) West-West Movers vs. Stayers



Notes: The figure reports the marginal effects of moving within East or West Germany, ZVS sample, compared to staying in East Germany. The upper part of each subfigure refers to controlling subversion of national culture. The lower part refers to limiting immigration. Marginal effects are reported for the seven individual values the dependent variables assume. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). Results are comparable to Figure 2. Whiskers indicate 95 percent confidence intervals.

Figure B4 Baseline model, marginal effects, West-East Movers



Notes: The figure reports the marginal effects of moving from West to East Germany compared to staying in West Germany. The upper figure refers to controlling subversion of national culture. The lower figure refers to limiting immigration. Marginal effects are reported for the seven individual values the dependent variables assume. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). Results are comparable to Figure 2. Whiskers indicate 95 percent confidence intervals.

C Robustness checks and additional results

Table C1 Regression results, baseline probit model. Strongly disagree and disagree = 1

| | (1) | (2) | (3) | (4) |
|--------------------|---|----------------------|-------------------------|----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | 0.297*** (3.66) | 0.285*** (3.44) | 0.352*** (4.07) | 0.324*** (3.68) |
| Male | | 0.220*** (3.43) | | 0.00397 (0.05) |
| Age | | 0.0591*** (2.92) | | 0.0600*** (2.58) |
| Semester | | -0.0186 (-1.51) | | -0.0154 (-1.09) |
| Married | | -0.0779 (-0.53) | | 0.0217 (0.14) |
| Children | | 0.273** (2.08) | | 0.0574 (0.40) |
| High school GPA | | -0.129** (-2.49) | | -0.0507 (-0.89) |
| Military service | | -0.176** (-2.46) | | -0.216*** (-2.65) |
| Constant | -0.429*** (-8.19) | -1.448*** (-3.50) | -1.010*** (-16.81) | -2.132*** (-4.45) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2816 | 2744 | 2829 | 2757 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of a probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The dependent variable assumes the value one when the individual student disagreed or strongly disagreed with limiting immigration. The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany.

*** Significant at the 1 percent level,

** Significant at the 5 percent level

Table C2 Experience effects, regression results. Probit model. Strongly disagree and disagree = 1

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|--------------------|----------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| | Controlling subversion of national culture | | Limiting immigration | | | | | |
| | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| | >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 |
| East-West Mover | 0.285*** (3.44) | 0.382*** (4.13) | 0.365*** (3.30) | 0.361** (2.46) | 0.324*** (3.68) | 0.406*** (4.19) | 0.504*** (4.39) | 0.578*** (3.86) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2744 | 2369 | 1800 | 1113 | 2757 | 2378 | 1805 | 1113 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of a probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The dependent variable assumes the value one when the individual student disagreed or strongly disagreed with limiting immigration. The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8).

*** Significant at the 1 percent level

** Significant at the 5 percent level,

Table C3 Regression results, baseline model. Probit model. Strongly agree and agree = 1

| | (1) | (2) | (3) | (4) |
|--------------------|---|--------------------|-------------------------|--------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.196** (-1.99) | -0.170* (-1.70) | -0.159* (-1.90) | -0.129 (-1.52) |
| Male | | 0.0394 (0.54) | | -0.0489 (-0.76) |
| Age | | -0.0342 (-1.49) | | -0.0259 (-1.30) |
| Semester | | 0.0272* (1.93) | | 0.000235 (0.02) |
| Married | | 0.0104 (0.06) | | 0.208 (1.43) |
| Children | | -0.125 (-0.78) | | -0.227* (-1.65) |
| High school GPA | | 0.0747 (1.30) | | 0.177*** (3.49) |
| Military service | | -0.0195 (-0.24) | | 0.273*** (3.80) |
| Constant | -0.832*** (-14.27) | -0.382 (-0.83) | -0.288*** (-5.56) | -0.0966 (-0.24) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2816 | 2744 | 2829 | 2757 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of a probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The dependent variable assumes the value one when the individual student agreed or strongly agreed with limiting immigration. The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany.

*** Significant at the 1 percent level,
** Significant at the 5 percent level,
* Significant at the 10 percent level

Table C4 Experience effects, regression results. Probit model. Strongly agree and agree = 1

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|----------|----------|----------|----------------------|----------|----------|----------|
| | Controlling subversion of national culture | | | | Limiting immigration | | | |
| Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=7 |
| East-West Mover | -0.170* | -0.237** | -0.248* | -0.255 | -0.129 | -0.152 | -0.0795 | -0.130 |
| | (-1.70) | (-2.07) | (-1.85) | (-1.48) | (-1.52) | (-1.60) | (-0.70) | (-0.86) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2744 | 2369 | 1800 | 1113 | 2757 | 2378 | 1805 | 1113 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of a probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The dependent variable assumes the value one when the individual student agreed or strongly agreed with limiting immigration. The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8).

** Significant at the 5 percent level,

* Significant at the 10 percent level

Table C5 Regression results, baseline model. Ordered probit model. Incl. fields of study

| | (1) | (2) | (3) | (4) |
|--------------------|---|-----------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.227*** (-3.17) | -0.224*** (-3.02) | -0.242*** (-3.54) | -0.228*** (-3.23) |
| Male | | -0.181*** (-3.17) | | -0.0911* (-1.67) |
| Age | | -0.0606*** (-3.53) | | -0.0568*** (-3.26) |
| Semester | | 0.0238** (2.26) | | 0.0183* (1.71) |
| Married | | 0.0996 (0.82) | | 0.218* (1.74) |
| Children | | -0.177 (-1.46) | | -0.163 (-1.38) |
| High school GPA | | 0.107** (2.48) | | 0.130*** (3.03) |
| Military service | | 0.129** (2.10) | | 0.268*** (4.57) |
| Humanities | | -0.360*** (-3.49) | | -0.358*** (-3.61) |
| Social Sciences | | -0.314*** (-2.98) | | -0.386*** (-3.66) |
| Law | | -0.0677 (-0.64) | | 0.0972 (0.95) |
| Economics | | 0.102 (1.01) | | 0.139 (1.41) |
| Medicine | | -0.00985 (-0.08) | | 0.0128 (0.11) |
| Natural Sciences | | -0.198* (-1.88) | | -0.237** (-2.26) |
| Engineering | | -0.0221 (-0.23) | | 0.0720 (0.76) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2816 | 2737 | 2829 | 2750 |

z statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table C6 Experience effects, regression results. Ordered probit model. Incl. fields of study

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| | Controlling subversion of national culture | | Limiting immigration | | | | | |
| Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=7 |
| East-West Mover | -0.224*** (-3.02) | -0.314*** (-3.80) | -0.294*** (-3.01) | -0.282** (-2.14) | -0.228*** (-3.23) | -0.279*** (-3.55) | -0.274*** (-2.85) | -0.359*** (-2.77) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2737 | 2363 | 1797 | 1111 | 2750 | 2372 | 1802 | 1111 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8). We include dummy variables for the students’ field of study as additional control variables.

*** Significant at the 1 percent level,

** Significant at the 5 percent level

Table C7 Regression results, baseline model. Ordered probit model, without military service as a control variable.

| | (1) | (2) | (3) | (4) |
|--------------------|---|-----------------------|-------------------------|----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.227*** (-3.17) | -0.221*** (-3.01) | -0.242*** (-3.54) | -0.232*** (-3.35) |
| Male | | -0.0535 (-1.20) | | 0.127*** (2.84) |
| Age | | -0.0462*** (-2.78) | | -0.0387** (-2.27) |
| Semester | | 0.0185* (1.79) | | 0.0125 (1.19) |
| Married | | 0.0470 (0.39) | | 0.138 (1.10) |
| Children | | -0.201* (-1.67) | | -0.208* (-1.76) |
| High school GPA | | 0.0871** (2.13) | | 0.101** (2.48) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2816 | 2749 | 2829 | 2762 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration without the inclusion of military service as a control variable. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany.

- *** Significant at the 1 percent level,
- ** Significant at the 5 percent level
- * Significant at the 10 percent level

Table C8 Regression results, baseline model. Ordered probit model, controlling for university grades

| | (1) | (2) | (3) | (4) |
|--------------------|---|---------------------|-------------------------|----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.177** (-2.45) | -0.175** (-2.11) | -0.182*** (-2.61) | -0.158** (-2.00) |
| Male | | -0.0822 (-1.14) | | 0.0680 (0.98) |
| Age | | -0.0419* (-1.82) | | -0.0583** (-2.49) |
| Semester | | 0.0137 (0.96) | | 0.0122 (0.83) |
| Married | | -0.0332 (-0.23) | | 0.143 (0.99) |
| Children | | -0.0296 (-0.19) | | -0.107 (-0.69) |
| High school GPA | | 0.0615 (1.08) | | 0.0629 (1.12) |
| Military service | | 0.113 (1.40) | | 0.219*** (2.89) |
| University grades | | 0.126*** (5.90) | | 0.144*** (6.91) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 1977 | 1657 | 1987 | 1664 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration with the inclusion of university grades as a control variable. University grades are measured on a scale from 1 to 5, with 1 being the best. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany.

- *** Significant at the 1 percent level,
- ** Significant at the 5 percent level
- * Significant at the 10 percent level

Table C9 Regression results, baseline model. Ordered probit model. Jackknife tests, excluding one university at a time.

| Excluded university | (1) Controlling subversion of national culture | (2) Controlling subversion of national culture | (3) Limiting immigration | (4) Limiting immigration |
|---------------------|--|--|--------------------------------|--------------------------------|
| TU Berlin | -0.306*** | -0.310*** | -0.282*** | -0.263*** |
| Uni Bochum | -0.216*** | -0.206*** | -0.233*** | -0.209*** |
| TU Dresden | -0.219*** | -0.208*** | -0.231*** | -0.210*** |
| Uni Frankfurt | -0.220*** | -0.208*** | -0.237*** | -0.213*** |
| Uni Freiburg | -0.214*** | -0.203*** | -0.222*** | -0.200*** |
| Uni Hamburg | -0.206*** | -0.198*** | -0.235*** | -0.212*** |
| Uni Karlsruhe (KIT) | -0.220*** | -0.209*** | -0.233*** | -0.207*** |
| Uni Leipzig | -0.254*** | -0.250*** | -0.278*** | -0.260*** |
| Uni Magdeburg | -0.212*** | -0.198*** | -0.230*** | -0.208*** |
| Uni München | -0.225*** | -0.214*** | -0.244*** | -0.218*** |
| Uni Potsdam | -0.225*** | -0.218*** | -0.248*** | -0.222*** |
| Uni Rostock | -0.229*** | -0.222*** | -0.237*** | -0.214*** |
| FH Coburg | -0.220*** | -0.201** | -0.267*** | -0.240*** |
| FH Erfurt | -0.235*** | -0.225*** | -0.253*** | -0.229*** |
| FH Frankfurt | -0.229*** | -0.220*** | -0.248*** | -0.226*** |
| FH Hamburg | -0.243*** | -0.235*** | -0.256*** | -0.234*** |
| FH Kiel | -0.228*** | -0.219*** | -0.228*** | -0.205*** |
| FH Magdeburg | -0.222*** | -0.213*** | -0.231*** | -0.208*** |
| FH München | -0.236*** | -0.227*** | -0.256*** | -0.232*** |
| FH Stralsund | -0.220*** | -0.208*** | -0.233*** | -0.208*** |

Notes: The table reports the results of Jackknife tests, excluding the indicated university in that specific line. Coefficient estimates of the East-West Mover variable. Specifications as in Table 2.

- *** Significant at the 1 percent level,
- ** Significant at the 5 percent level
- * Significant at the 10 percent level

Table C10 Experience effects, regression results. Ordered probit model. Jackknife tests, excluding one university at a time. Coefficient estimates of the East-West Mover variable. Specifications as in Table 3

| Excluded university | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | | (7) | | (8) | |
|---------------------|--|-----------|----------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----|----------|-----|----------|-----|
| | Controlling subversion of national culture | | Limiting immigration | | Semester | | Semester | | Semester | | Semester | | Semester | | Semester | |
| | >=1 | >=3 | >=3 | >=5 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=3 | >=5 | >=5 | >=7 | >=7 | >=7 |
| TU Berlin | -0.310*** | -0.475*** | -0.461*** | -0.290*** | -0.286** | -0.616*** | -0.263*** | -0.306*** | -0.258** | -0.409*** | | | | | | |
| Uni Bochum | -0.206*** | -0.303*** | -0.294*** | -0.266*** | -0.275** | -0.237* | -0.210*** | -0.259*** | -0.275*** | -0.338*** | | | | | | |
| TU Dresden | -0.208*** | -0.307*** | -0.266*** | -0.288*** | -0.260* | -0.264** | -0.213*** | -0.260*** | -0.267*** | -0.328** | | | | | | |
| Uni Frankfurt | -0.208*** | -0.295*** | -0.281*** | -0.273*** | -0.264** | -0.347*** | -0.212*** | -0.256*** | -0.270*** | -0.346** | | | | | | |
| Uni Freiburg | -0.203*** | -0.303*** | -0.273*** | -0.265*** | -0.261** | -0.261** | -0.200*** | -0.257*** | -0.270*** | -0.341*** | | | | | | |
| Uni Hamburg | -0.198*** | -0.281*** | -0.272*** | -0.289*** | -0.290** | -0.290** | -0.212*** | -0.256*** | -0.270*** | -0.326** | | | | | | |
| Uni Karlsruhe (KIT) | -0.209*** | -0.305*** | -0.272*** | -0.289*** | -0.294** | -0.294** | -0.207*** | -0.260*** | -0.266*** | -0.337*** | | | | | | |
| Uni Leipzig | -0.250*** | -0.342*** | -0.265*** | -0.289*** | -0.286** | -0.286** | -0.260*** | -0.304*** | -0.314*** | -0.402*** | | | | | | |
| Uni Magdeburg | -0.198*** | -0.293*** | -0.265*** | -0.289*** | -0.292** | -0.292** | -0.208*** | -0.262*** | -0.271*** | -0.349*** | | | | | | |
| Uni München | -0.214*** | -0.308*** | -0.289*** | -0.297*** | -0.287** | -0.287** | -0.218*** | -0.263*** | -0.275*** | -0.350*** | | | | | | |
| Uni Potsdam | -0.218*** | -0.313*** | -0.299*** | -0.304*** | -0.310** | -0.310** | -0.222*** | -0.275*** | -0.277*** | -0.367*** | | | | | | |
| Uni Rostock | -0.222*** | -0.313*** | -0.293*** | -0.272*** | -0.279** | -0.279** | -0.214*** | -0.265*** | -0.271*** | -0.358*** | | | | | | |
| FH Coburg | -0.201** | -0.281*** | -0.272*** | -0.289*** | -0.292** | -0.292** | -0.240*** | -0.297*** | -0.332*** | -0.443*** | | | | | | |
| FH Erfurt | -0.225*** | -0.312*** | -0.289*** | -0.297*** | -0.287** | -0.287** | -0.229*** | -0.275*** | -0.284*** | -0.357*** | | | | | | |
| FH Frankfurt | -0.220*** | -0.316*** | -0.297*** | -0.297*** | -0.310** | -0.310** | -0.226*** | -0.279*** | -0.292*** | -0.361*** | | | | | | |
| FH Hamburg | -0.235*** | -0.325*** | -0.304*** | -0.273*** | -0.272** | -0.272** | -0.234*** | -0.283*** | -0.298*** | -0.371*** | | | | | | |
| FH Kiel | -0.219*** | -0.300*** | -0.273*** | -0.281*** | -0.288** | -0.288** | -0.205*** | -0.249*** | -0.250** | -0.324** | | | | | | |
| FH Magdeburg | -0.213*** | -0.306*** | -0.281*** | -0.281*** | -0.303** | -0.303** | -0.208*** | -0.258*** | -0.269*** | -0.342*** | | | | | | |
| FH München | -0.227*** | -0.325*** | -0.305*** | -0.305*** | -0.281** | -0.281** | -0.232*** | -0.287*** | -0.295*** | -0.380*** | | | | | | |
| FH Stralsund | -0.208*** | -0.301*** | -0.279*** | -0.279*** | -0.281** | -0.281** | -0.208*** | -0.262*** | -0.275*** | -0.361*** | | | | | | |

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

D Results with alternative definition of socialization

Table D1 Regression results, baseline model. Ordered probit model. Age 13

| | (1) | (2) | (3) | (4) |
|--------------------|---|-----------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.177** (-2.55) | -0.165** (-2.32) | -0.211*** (-3.17) | -0.182*** (-2.72) |
| Male | | -0.114** (-2.14) | | -0.00580 (-0.11) |
| Age | | -0.0507*** (-3.07) | | -0.0468*** (-2.77) |
| Semester | | 0.0170* (1.67) | | 0.0129 (1.25) |
| Married | | 0.0687 (0.57) | | 0.149 (1.19) |
| Children | | -0.193 (-1.60) | | -0.190 (-1.62) |
| High school GPA | | 0.107*** (2.72) | | 0.127*** (3.24) |
| Military service | | 0.137** (2.30) | | 0.282*** (4.95) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2982 | 2905 | 2996 | 2919 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students who lived for at least 13 years in East Germany (instead of 14 years in the baseline model).

- *** Significant at the 1 percent level,
- ** Significant at the 5 percent level,
- * Significant at the 10 percent level

Table D2 Experience effects, regression results. Ordered probit model. Age 13

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| | Controlling subversion of national culture | | | | Limiting immigration | | | |
| Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=7 |
| East-West Mover | -0.165** (-2.32) | -0.274*** (-3.39) | -0.287*** (-2.98) | -0.292** (-2.24) | -0.182*** (-2.72) | -0.252*** (-3.37) | -0.280*** (-2.97) | -0.357*** (-2.81) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2905 | 2456 | 1822 | 1114 | 2919 | 2465 | 1827 | 1114 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8). We consider students who lived for at least 13 years in East Germany (instead of 14 years in the baseline model).

*** Significant at the 1 percent level,

** Significant at the 5 percent level

Table D3 Regression results, baseline model. Ordered probit model. Age 15

| | (1) | (2) | (3) | (4) |
|--------------------|---|-----------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.185** (-2.45) | -0.176** (-2.27) | -0.226*** (-3.10) | -0.202*** (-2.76) |
| Male | | -0.101* (-1.79) | | 0.0195 (0.36) |
| Age | | -0.0574*** (-3.31) | | -0.0546*** (-3.08) |
| Semester | | 0.0220** (2.05) | | 0.0123 (1.14) |
| Married | | 0.0743 (0.61) | | 0.163 (1.30) |
| Children | | -0.191 (-1.59) | | -0.188 (-1.61) |
| High school GPA | | 0.103** (2.36) | | 0.0983** (2.27) |
| Military service | | 0.122* (1.95) | | 0.251*** (4.19) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2596 | 2529 | 2608 | 2541 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students who lived for at least 15 years in East Germany (instead of 14 years in the baseline model).

- *** Significant at the 1 percent level,
- ** Significant at the 5 percent level,
- * Significant at the 10 percent level

Table D4 Experience effects, regression results. Ordered probit model. Age 15

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| | Controlling subversion of national culture | | | | Limiting immigration | | | |
| Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=7 |
| East-West Mover | -0.176** (-2.27) | -0.259*** (-3.02) | -0.263*** (-2.64) | -0.285** (-2.18) | -0.202*** (-2.76) | -0.250*** (-3.11) | -0.290*** (-2.95) | -0.366*** (-2.85) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2529 | 2206 | 1702 | 1089 | 2541 | 2214 | 1706 | 1089 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8). We consider students who lived for at least 15 years in East Germany (instead of 14 years in the baseline model).

*** Significant at the 1 percent level,

** Significant at the 5 percent level

Table D5 Regression results, baseline model. Ordered probit model. One parent West

| | (1) | (2) | (3) | (4) |
|--------------------|---|-----------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.231*** (-3.24) | -0.222*** (-3.03) | -0.248*** (-3.64) | -0.226*** (-3.30) |
| Male | | -0.114** (-2.10) | | -0.00707 (-0.14) |
| Age | | -0.0510*** (-3.04) | | -0.0476*** (-2.77) |
| Semester | | 0.0181* (1.75) | | 0.0130 (1.24) |
| Married | | 0.0339 (0.28) | | 0.122 (0.98) |
| Children | | -0.165 (-1.37) | | -0.171 (-1.46) |
| High school GPA | | 0.0915** (2.23) | | 0.118*** (2.88) |
| Military service | | 0.127** (2.08) | | 0.275*** (4.71) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2837 | 2765 | 2850 | 2778 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to answer these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students socialized in East Germany when at least one parent was socialized in East Germany.

*** Significant at the 1 percent level,
** Significant at the 5 percent level,
* Significant at the 10 percent level

Table D6 Experience effects, regression results. Ordered probit model. One parent West

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| | Controlling subversion of national culture | | | | Limiting immigration | | | |
| Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=7 |
| East-West Mover | -0.222*** (-3.03) | -0.307*** (-3.76) | -0.291*** (-2.98) | -0.292** (-2.23) | -0.226*** (-3.30) | -0.271*** (-3.56) | -0.281*** (-2.95) | -0.358*** (-2.81) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2765 | 2383 | 1811 | 1119 | 2778 | 2392 | 1816 | 1119 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to answer these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8). We consider students socialized in East Germany when at least one parent was socialized in East Germany.

*** Significant at the 1 percent level,

** Significant at the 5 percent level

Table D7 Regression results, baseline model. Ordered probit model. School West

| | (1) | (2) | (3) | (4) |
|--------------------|---|-----------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.270*** (-4.21) | -0.260*** (-3.94) | -0.271*** (-4.50) | -0.253*** (-4.14) |
| Male | | -0.108** (-2.04) | | 0.0128 (0.25) |
| Age | | -0.0543*** (-3.32) | | -0.0525*** (-3.15) |
| Semester | | 0.0163 (1.61) | | 0.0136 (1.33) |
| Married | | 0.0367 (0.31) | | 0.137 (1.12) |
| Children | | -0.190 (-1.60) | | -0.197* (-1.70) |
| High school GPA | | 0.0834** (2.12) | | 0.0990*** (2.58) |
| Military service | | 0.123** (2.06) | | 0.268*** (4.69) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2924 | 2849 | 2938 | 2863 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We include also students who finished school in West Germany.

*** Significant at the 1 percent level,
 ** Significant at the 5 percent level,
 * Significant at the 10 percent level

Table D8 Experience effects, regression results. Ordered probit model. School West

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Controlling subversion of national culture | | | | Limiting immigration | | | |
| | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| East-West Mover | -0.260*** (-3.94) | -0.362*** (-4.78) | -0.345*** (-3.86) | -0.368*** (-3.13) | -0.253*** (-4.14) | -0.310*** (-4.49) | -0.331*** (-3.90) | -0.432*** (-3.87) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2849 | 2443 | 1850 | 1146 | 2863 | 2453 | 1855 | 1146 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8). We include also students who finished school in West Germany.

*** Significant at the 1 percent level

Table D9 Regression results, baseline model. Ordered probit model. Parents West

| | (1) | (2) | (3) | (4) |
|--------------------|---|-----------------------|-------------------------|-----------------------|
| | Controlling subversion of national culture | | Limiting immigration | |
| East-West Mover | -0.247*** (-3.63) | -0.239*** (-3.42) | -0.271*** (-4.26) | -0.255*** (-3.97) |
| Male | | -0.104* (-1.92) | | 0.00506 (0.10) |
| Age | | -0.0505*** (-3.03) | | -0.0487*** (-2.88) |
| Semester | | 0.0189* (1.84) | | 0.0146 (1.41) |
| Married | | 0.0336 (0.28) | | 0.136 (1.11) |
| Children | | -0.145 (-1.22) | | -0.194* (-1.65) |
| High school GPA | | 0.0944** (2.37) | | 0.113*** (2.85) |
| Military service | | 0.118* (1.93) | | 0.269*** (4.62) |
| Wave fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2873 | 2799 | 2886 | 2812 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) and (2) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (3) and (4) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We code students also as socialized in the GDR when they finished school in the GDR but their parents finished their educational career in West Germany.

- *** Significant at the 1 percent level,
- ** Significant at the 5 percent level,
- * Significant at the 10 percent level

Table D10 Experience effects, regression results. Ordered probit model. Parents West

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------------|--|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| | Controlling subversion of national culture | | | | Limiting immigration | | | |
| Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester | Semester |
| >=1 | >=3 | >=5 | >=7 | >=1 | >=3 | >=5 | >=7 | >=7 |
| East-West Mover | -0.239*** (-3.42) | -0.333*** (-4.29) | -0.297*** (-3.16) | -0.252** (-2.03) | -0.255*** (-3.97) | -0.301*** (-4.23) | -0.284*** (-3.20) | -0.311*** (-2.66) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Wave fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2799 | 2417 | 1830 | 1134 | 2812 | 2426 | 1835 | 1134 |

Notes: The table reports the results of our empirical model on how migrating from East to West Germany influences attitudes toward immigration. We report parameter estimates of an ordered probit model. Robust z statistics are reported in parentheses. Columns (1) to (4) refer to results when we use *Controlling subversion of national culture* as the dependent variable. Columns (5) to (8) refer to results when we use *Limiting immigration* as the dependent variable. Both dependent variables show answers to the questions: “What do you think about the following political aims: Which ones do you support, which ones do you dismiss?: *Controlling subversion of national culture* and *Limiting immigration*”. Students were asked to assess these questions on a Likert scale that assumes values between 1 (strongly disagree) and 7 (strongly agree). The *East-West Mover* variable assumes the value one when the individual student migrated from East to West Germany. The counterfactual is movers within East Germany. We consider students studying at least in first semester (columns 1 and 5), third semester (columns 2 and 6), fifth semester (columns 3 and 7) and seventh semester (columns 4 and 8). We code students also as socialized in the GDR when they finished school in the GDR but their parents finished their educational career in West Germany.

*** Significant at the 1 percent level,

** Significant at the 5 percent level