The Effects of 9/11 on Attitudes Toward Immigration and the Moderating Role of Education

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Abstract

The major event of the 9/11 terror attacks has likely induced an increase in anti-immigrant and anti-foreigner sentiment, not only among US residents but also beyond US borders. Using longitudinal data from the German Socio-Economic Panel (SOEP), and exploiting the fact that survey interviews have been randomly conducted throughout the year 2001 – before and after September 11 – I am able to identify the immediate negative impact of the terrorist attack in the US on attitudes toward immigration as well as on concerns over xenophobic hostility in Germany. Further, this quasi-experiment provides evidence on the role of education in moderating the negative terrorism shock.

Keywords: September 11, Terrorism, Attitudes toward Immigration.

JEL Classification Numbers: J71, (J78,) I21.

1 Introduction

Several recent studies have examined whether the terrorist attacks in the USA on September 11, 2001 (9/11) increased labor market discrimination toward certain minorities not only in the US (e.g. Dávila and Mora, 2005; Orrenius and Zavodny, 2006; Kaushal et al., 2007; Rabby and Rodgers, 2011), but also in other countries such as Canada (Shannon, 2012), Australia (Goel, 2009), the UK (Braakmann, 2010), Sweden (Åslund and Rooth, 2005) or Germany (Braakmann, 2009; Cornelissen and Jirjahn, 2012). These studies are based on two assumptions. First, that the 9/11 attacks had a direct and large enough impact on individuals' attitudes resulting in an increase in discriminatory behavior towards immigrants as a group or certain minorities. Second, the terrorist attacks in the US are assumed to have caused negative international spillover effects to public sentiments towards minority groups in other countries. The existing empirical literature relies on evidence from aggregate time trends which indicate, e.g., dramatic increases in hate crimes against muslims in the aftermath of the 9/11 attacks, not only in the US but also beyond US borders. Overall, it is not surprising that a large-scale terror event such as 9/11 fueled acts of anti-immigrant or anti-muslim aggression and hostility. It stands to reason, however, whether these events caused attitude shifts in the wider society and whether such an impact was uniform across all types of individuals. To date, no empirical study has attempted to establish a causal connection between the 9/11 incident and attitude shifts in the overall population, neither in the US nor beyond US borders, and nothing is known about heterogeneous effects.

This study offers the first empirical analysis to test the causality of the relationship between the terrorist attacks in one country and attitude shifts in another country controlling for aggregate time trends. Using data from the German Socio-Economic Panel (SOEP) allows me to examine the impact of the 9/11 attacks on attitudes of German residents in a quasi-experimental setting. I exploit the fact that annual survey interviews are randomly completed throughout the year. Comparing the attitude levels of pre- and post-9/11 respondents in 2001, and relating these attitudes to the respective attitude levels of the same respondents one year prior, provides approximate estimates of the causal impact of the terror attacks on the attitudes toward immigration of the German population. Similar strategies have been used by Metcalfe et al. (2011) to analyze 9/11-effects on subjective well-being in the UK and by Goel (2009) to investigate on changes in immigrants' perception of racial intolerance and labor market outcomes in Australia as a consequence of 9/11.

Besides documenting whether the events of 9/11 resulted in attitudinal changes toward immigration outside the US in a European country, this analysis will also

contribute in a more general way to the literature concerned with the question to what extent people's views about immigration are driven by factors other than economic self-interest. Several recent studies have consistently found a significant and positive relationship between education or skill levels among individuals and their views about immigration (e.g. Scheve and Slaughter, 2001; Mayda, 2006). While these findings have been interpreted as a reflection of labor-market dynamics where low-skilled workers are most opposed to low-skilled immigration due to realistic fears about labor market competition, another line of scholars have questioned this interpretation. Dustmann and Preston (2007) and Hainmueller and Hiscox (2007, 2010), e.g., find that a large component of the effect of education on individual attitudes toward immigration is associated with differences in cultural values and beliefs rather than fear of labor market competition. Utilizing the 9/11 events as an exogenous, non-economic shock, I am able to identify the extent to which education plays a moderating role in attitude formation in the absence of a realistic threat of economic competition. I also provide estimates of potential heterogeneous effects by gender and age.

Furthermore, I examine two types of immigration-related attitudes: Next to the main dependent variable measuring individual's concerns over immigration to Germany, i.e., views on the phenomenon of immigration, I investigate additionally on individual attitudes toward immigrants as people. The latter measure is based on a survey question on the strength of people's concerns over hostility toward foreigners or minorities in Germany. The two types of attitudes are approached as distinct since they are likely to tap into different connotations. While reactions to immigration are mainly associated with evaluations of immigration policies and perceived consequences of immigration for the host country, public views toward immigrants are more likely related to ethnic prejudice or discrimination (Bauer et al., 2000; Ceobanu and Escandell, 2010).

To preview the results, I find indeed a non-negligible shift into more negative attitudes toward immigration among German residents as a result of the 9/11 terrorist attacks. At the same time, the attacks resulted in decreasing concerns over hostility toward foreigners. Moreover, I find no evidence of the 9/11 events causing similar changes in individuals' worries about overall economic development or about crime in Germany, which confirms the noneconomic nature of the 9/11 shock on immigration-related attitudes. Further investigation shows that a significant 9/11 impact on attitudes toward immigration is mainly prevalent among respondents with below-average education levels, while I find no evidence of a significant attitude shift among highly educated individuals. These results are consistent with a moderating role of education in the attitudinal response to the 9/11 attacks. Yet, in terms of con-

cerns about hostility towards foreigners, both high- and low-educated respondents reacted equally strong to the attacks with lower worries about hostility. The overall findings provided in this study are, to the best of my knowledge, the first evidence of its kind on the causal relationship between terrorism and public attitudes toward immigration.

The paper is organized as follows. The next section provides a brief summary of the existing evidence on negative attitude shifts in the aftermath of 9/11 in countries outside the US, with a particular focus on Germany. In Section 3, the data and the employed empirical strategy are introduced. Section 4 contains the results of the empirical application for Germany, and Section 5 concludes.

2 Background

2.1 9/11 and Anti-Immigrant Attitudes

Strong evidence from aggregate time trends suggests that anti-muslim sentiment and xenophobic aggression increased considerably among the US population in the aftermath of the 9/11 attacks. The American-Arab Anti-Discrimination Committee (2003) reports over 700 incidents targeting Arab Americans or those perceived as such, including several murders. Human Rights Watch (2002) and Gould and Klor (2012) refer to data from the FBI Uniform Crime Reporting Program (UCR) showing a 16-fold increase in the reported total number of hate crimes against Muslims from 2000 to 2001.

There is also evidence that the events of 9/11 had a negative impact on attitudes toward immigration beyond US borders. In Canada, the Toronto Police Service Hate Crime Unit statistics show a 66 percent rise in hostile acts in late 2001 (Helly, 2004, p.26). Åslund and Rooth (2005) cite aggregate statistics from the *Forskargruppen för Samhälls- och Informationsstudier* (FSI) showing a 18-percentage-points drop in the fraction of Swedish respondents expressing positive attitudes toward immigration from 51 percent in the period June–August 2001 to 33 percent in the period from September 11 – September 30. With respect to a reaction of the German population in response to the 9/11 attacks, Brosig and Brähler (2002) describe evidence from four representative opinion surveys collected before and after 9/11 in the form of repeated cross-sections. Their findings suggest a negative change in public attitudes towards certain minority groups, particularly muslims. The fraction of respondents who would dislike having muslims as neighbors rose from 12 percent in June 2001 to 19 percent in April 2002. There is, however, no indication that this increase in "social distance" towards muslims translated into more negative attitudes toward the

group of immigrants or foreigners as a whole. The fraction of respondents expressing a distaste for foreign or guestworker neighbors did remain constant at 11 percent. Furthermore, the fear of foreigners in Germany did not appear to increase but rather decrease when comparing 2002 survey responses to results from 1999 (Brosig and Brähler, 2002, p.87–88).

In summary, there are strong suggestions of a negative attitude shift following the 9/11 terrorist attacks in the US as well as some suggestive indication that the attacks might also have had an impact on attitudes in European countries. However, this evidence is mainly based on aggregate time trends. To the best of my knowledge no attempts have been made in the existing literature to provide systematic empirical evidence of this relationship and directly test the causality of the effects on attitudes toward immigration. This might be to a great extent due to limited data availability, since most surveys of attitudes toward immigrants are collected as cross-sectional data or at as most repeated cross-sections.

2.2 The Moderating Role of Education

Insofar as the 9/11 terrorist attacks have triggered negative attitudes, there is no direct evidence on whether the 9/11 events had a uniform effect across the entire society or whether the impact varied between heterogeneous subgroups of the population.[1] This study offers first exploratory evidence on which types of individuals have been most affected in terms of immigration-related attitudes with a focus on individuals' educational attainment.

I draw on previous literature on immigration-related attitude formation to differentiate between groups who are likely at high risk of responding to a negative and intense noneconomic attitude shock such as the 9/11 attacks and those who are expected to be at relatively lower risk of changing their minds. Most studies find that education plays a key role in the perception of immigration and immigrants (e.g. Bauer et al., 2000; Scheve and Slaughter, 2001; Mayda, 2006; Dustmann and Preston, 2007; Hainmueller and Hiscox, 2007, 2010). Gang and Rivera-Batiz (1994) and Fertig and Schmidt (2009) confirm the findings of the low-educated holding relatively more negative attitudes in the German context. What lies at the heart of the consistently found positive relationship between educational attainment and attitudes toward immigration and immigrants is, however, controversially debated in the economic literature. The fact that the highly educated hold more favorable

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[1]The most closely related study is Cornelissen and Jirjahn (2012) who find negative 9/11-effects in terms of wage discrimination among low-skilled Muslim employees only, and not among the higher skilled Muslims. Assuming that low-skilled Muslims have low-skilled German superiors and co-workers, they attribute this finding to a moderating effect of education in xenophobic attitudes.

attitudes may, on the one hand, predominantly reflect their labor market position, which is less vulnerable to typically low-skilled immigration. On the other hand, it could also reflect the liberizing effect of education per se resulting in less ethnic prejudice and greater appreciation of cultural diversity among the highly educated.

The context of the 9/11 attacks in 2001 provides a quasi-experimental setting inducing an exogenous shock on individuals' attitudes toward immigrants and immigration. I will argue in the following that this shock has been noneconomic in nature and thus increased perceived cultural rather than economic threat. This is reflected by findings presented in Section 4, showing that the 9/11 events had no significant impact on people's attitudes toward the overall economic development or their concerns over crime in Germany. It appears likely that the attacks may not have been perceived as being associated with increased immigration inflows or changes in immigrants' skill composition or productivity.

In view of 9/11 as a noneconomic exogenous shock and against the background of the previous literature on attitude formation, I thus hypothesize that the attacks had a stronger impact on attitudes of relatively lower educated Germans than on attitudes of highly educated Germans. I furthermore expect a moderating role of education with respect to both, individual concerns over immigration as well as worries about hostility toward foreigners.

3   Data and Empirical Setup

3.1   Data

This study examines the effects of 9/11 on attitudes toward immigration among German residents. The terrorist attacks of September 11, 2001 act as an exogenous shock providing a powerful quasi-experiment. I use a large longitudinal dataset, consisting of about 20,000 individuals, which allows to control for individual heterogeneity and underlying time trends.

The German Socio-Economic Panel (SOEP)[2] is a nationally representative, longitudinal study of private households in Germany and is conducted in annual waves starting in 1984. Respondents are interviewed throughout the year with random timing of the interviews. Although the bulk of interviews is usually taking place during the first half of each year, a considerable amount of respondents are interviewed during the later months. These data thus provide the unique opportunity to exploit the timing of survey interviews in 2001 to identify 9/11 effects.

The two main dependent variables employed in this analysis measure individuals'

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[2]See Wagner et al. (2007) for a comprehensive description of this dataset.

concern over immigration to Germany as well as concern over hostility toward foreigners or minorities in Germany on a three-point category scale ranging from "not at all" to "somewhat" to "very concerned". In the year 2000, 32.09 percent of native German respondents were very concerned about immigration to Germany, while 21.90 percent where not at all concerned. In the same year, 31.26 percent stated a strong concern over hostility toward foreigners or minorities in Germany, and 16.55 percent were not worried at all about this issue. Measures of concern over general economic development and about crime in Germany are scaled the same way as the main dependent variables.

Two subsamples are considered in the following. The first subsample includes all individuals of age 17 or older without a so-called migration background[3] who were interviewed between January 2000 and December 2001, i.e. the 2000 and 2001 SOEP waves. Individuals who took no interview in 2001 or who were interviewed on the date of September 11 in 2001 are excluded from the analysis. Also, observations with missing information on either of the two main dependent variables are discarded (1.58 percent of the total sample). This first sample is unbalanced and includes a total of 34,653 observations (16,663 in 2000 and 17,990 in 2001). Next, I consider a second subsample, which additionally includes the two-year period before and after the 9/11 terror attacks, i.e. the waves 1999–2004. This second unbalanced sample consists of 70,799 observations.

Table 1 about here

Descriptive statistics of the two samples are presented in Table 1. Each of the samples is again split into two groups – the pre-9/11 (control) group which includes individuals who were interviewed in 2001 between January 1st and September 10, and the post-9/11 (treatment) group which consists of individuals surveyed between September 11 and December 31 in the year 2001. Individuals in the post-9/11 group are on average younger, report a slightly higher household income, are less likely to be on maternal leave or widowed and more likely to be single than respondents in the control group. Although it is not clear why these differences occur, it appears to be important to control for these characteristics.

3.2   Empirical Strategy

To identify the effects of 9/11 on individual attitudes of German natives toward immigration and toward xenophobic hostility, I apply a difference-in-difference approach, comparing attitude levels of pre- and post-9/11 respondents in 2001 and

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[3]An individual is defined as having a migration background if the person is an immigrant to Germany or is born in Germany to immigrant parents.

relating them to the same respondents' attitude level one year prior. A_{it} denotes the level of concern over immigration (hostility toward foreigners) of individual i at time t. $Post9/11$ is a dummy variable equal to one if the survey interview took place after September 11 in 2001, i.e. in the period from 12 September to 31 December 2001, and zero otherwise. $Year=2001$ is a dummy representing the 2001 survey year, the year of the terror attacks, u_i is an individual fixed effect, and ϵ_{it} is a time-varying random error term.

$$A_{it} = \alpha + \beta_1 Post9/11_{it} + \beta_2 (Year = 2001)_t + \beta_3 [Post9/11_{it} \times (Year = 2001)_t] + u_i + \epsilon_{it}$$

Parameter β_3 is the difference-in-difference estimator and will represent the causal impact of 9/11 on those interviewed between 12 September and 31 December 2001 under the assumption that attitudes of the pre- and post-9/11 group would have changed identically in the absence of the terror events. The parameter is identified through variation in average attitude levels between respondents who were interviewed before and after 9/11 in 2001, and comparison of this difference with variation in average attitudes between pre- and post-9/11 group in 2000. β_3 is estimated by applying either pooled OLS with clustering at the individual level, random-effects or fixed-effects models to the above equation. In the following I will additionally provide estimates of this approach including an extended time period of two years before and after the terror attacks, i.e. the years 1999-2003, to better control for underlying aggregate time trends.

4   Results and Discussion

4.1   Baseline results

Table 2 presents first evidence of a 9/11 impact on individual attitudes toward immigration as well as concerns over xenophobic hostility in Germany. For each dependent variable, estimates using OLS as well as GLS random- and fixed-effects models are shown. With respect to attitudes toward immigration, the coefficients on the interaction term between $Post9/11$ and $Year=2001$ are statistically significant and positive across all three models. The point estimates range between 0.129 and 0.152, which is about 38 to 44 percent of one within-individual standard deviation in worries about immigration. This indicates that the post-9/11 treatment group experienced a substantial increase in concerns over immigration, while at the same time, respondents in the pre-9/11 control group are even slightly less worried about

immigration in 2001 than these same individuals reported in 2000. Interestingly, a similar pattern is observed with respect to people's concern over hostility toward foreigners or minorities in Germany. Across all three models, the estimated coefficient on the interaction term is significant and negative with magnitudes ranging from roughly 29 to 36 percent of one within standard deviation in concerns over xenophobic hostility. This implies that the 9/11 attacks did not only result in increased worries about immigration, but also in a decrease in worries about xenophobic hostility in Germany. The significant and positive coefficient on *Year=2001* indicates that the control group of pre-9/11 respondents did instead experience a moderate increase in such concerns from 2000 to 2001.

Table 2 about here

This first set of results demonstrate the immediate negative effects of the 9/11 terror in the US on public attitudes in a European country. However, an important assumption is that the attitudes of both treatment and control group would have followed a similar path in the absence of the treatment. One way to check on this is to look at whether both groups' attitude levels followed a similar trend in the years that precede 2001 and in the years after the event. In a next step, I thus incorporate the two years before as well as two years after the attacks (survey years 1999-2003) in the analysis to control more carefully for underlying time trends. In this second set of estimations, controls for gender, age, age squared, log household income, as well as dummies for marital status, labor force status, education, federal state and interview month are added. Results of the generalized least squares models with random and fixed effects respectively are presented in Table 3. With this full specification the estimated coefficients on the interactions of interest (*Post9/11× Year=2001*) continue to be positive and statistically significant in the case of worries about immigration and significantly negative with respect to concerns about xenophobic hostility. In contrast, coefficients on the interaction terms between the post-9/11 treatment group and indicators for years prior or past 2001 appear not to be significantly different from zero. This supports the view that, controlling for the relevant covariates, the attitudes of the treatment group do not systematically differ from those of the pre-9/11 control group for reasons other than the exogenous and unanticipated 9/11 terror shock. Note that in years prior to 2001 both groups are untreated, while both are treated in years past 2001. Only in the year 2001, we thus expect both groups to differ due to interview timing pre- or post-9/11–and this seems to be confirmed by the estimation results in Table 3. Overall, the findings fit the evidence on international spillovers based on aggregated time trends.

Table 3 about here

Was the shift towards more negative immigration-related attitudes following the 9/11 terror attacks accompanied by shifts in other, more general types of macro attitudes? Of special interest are here in particular people's concerns over the general economic development as well as worries about crime in Germany. Table 4 explores the possibility that the 9/11 attacks had an impact also on these attitudes. Rerunning random and fixed effects models in the specification of Table 3 with measures of worries about economic development and worries about crime in Germany as dependent variables suggest no significant impact of 9/11 on these concerns. For all models in Table 4, the coefficient on the interaction of interest ($Post9/11 \times Year=2001$) is statistically insignificantly different from zero. This is consistent with the interpretation put forward in this paper of 9/11 representing a noneconomic shock.

$$\boxed{\text{Table 4 about here}}$$

4.2 The Moderating Role of Education

It is now clear that the 9/11 terror events had significant negative effects on individual attitudes toward immigration and resulted in a decrease in worries about xenophobic hostility in Germany. I now go on to investigate on whether different types of individuals have been more or less responsive to the 9/11 shock. Next to possible differential effects on individuals according to their education levels, I examine effect heterogeneity according to demographic characteristics such as gender and age. Table 5 recalculates the random effects estimations from Table 3 for split samples by gender, by age (i.e. under and over the age of 35) as well as by above and below average years of education (i.e. above and below 12 years of education), respectively for both main dependent variables.

The first set of results, which is concerned with worries about immigration indicates that men may have been slightly, however not statistically significantly more responsive than women to the 9/11 attacks. Similarly, younger individuals seem to have reacted more strongly than older people, but also these differences are not statistically significant. The previous background discussion suggested that education is expected to moderate 9/11 effects. Indeed, the estimation results by education level show that the attacks had a larger impact on the group of relatively lower educated individuals than on the highly educated. The difference is substantial and statistically significant.[4] Within the subsample of highly educated individuals, the estimated coefficient on the interaction $Post9/11 \times Year=2001$ is small in size and

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[4]When estimating specifications introducing interaction effects instead of split samples by education level, the difference in coefficients turns out to be significant at the 10 percent level (see Table A1 in the Appendix).

not significantly different from zero. Hence, the group of highly educated does not appear to have updated their attitudes toward immigration in the light of the 9/11 events.

<div style="text-align: center;">

Table 5 about here

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The second set of results in Table 5 deals with effect heterogeneity with respect to individual concerns over xenophobic hostility. Interestingly, and throughout the split samples, the estimated coefficients on the interaction $Post9/11 \times Year=2001$ are very similar to each other and, in fact, the differences between males and females, young and old, and also between the low and the high-educated group are not statistically significant. Consequently, the 9/11 attacks appear to have uniformly lowered individuals' worries about xenophobic hostility across the here analyzed population subgroups. In particular, there is no evidence of a moderating role of education. Both, the highly and lower educated did react equally strong to the attacks by being less concerned about xenophobic tendencies in the German society. This result is especially striking considering the previous finding of a such a moderating effect with respect to peoples' attitudes toward immigration.

The ambiguous nature of the measure of individuals' concerns over xenophobic hostility does, however, not allow for a straightforward interpretation of the latter results. The survey question might, in fact, trigger diverse connotations. While, for instance, one person might report weak concerns over xenophobic hostility because of a distaste for foreigners in Germany or a lack of empathy with them, another individual may report weak concerns due to his or her belief that there are no xenophobic tendencies immanent in the German society. The former would then reflect an opinion toward minorities or immigrants, while the latter would rather represent an opinion toward fellow German residents. Unfortunately, the different associations related to the survey question are not observable to the researcher and might even differ according to the respondent's educational level. The result of lower concerns over xenophobic hostility in response to the 9/11 events could thus either be interpreted as a shift into more negative attitudes toward immigrants and minorities or it might indicate a shift into more positive attitudes toward fellow German natives. While it is not possible in this study to clearly distinguish between these two interpretations, it is certainly not intuitive to think of a large-scale terror attack to have resulted in expectations of decreasing xenophobic tendencies in Germany, especially given the German history of xenophobic incidents and violent acts against foreigners (see e.g. Krueger and Pischke, 1997). Against this background, the finding of the low- and high-educated respondents reacting equally strong to the 9/11 events with

lower worries about xenophobic hostility may cast some doubt on the moderating role of education in this context.

5   Summary and Conclusion

This study shows that the 9/11 terror attacks in the US had a significant and negative impact on individual attitudes toward immigration and immigrants among native German residents. More specifically, it is shown that the attacks increased worries about immigration by about 38 to 44 percent of one within-individual standard deviation and lowered concerns over xenophobic hostility by approximately 29 to 36 percent of one within standard deviation. These effects are significant and robust.

Moreover, this analysis provides evidence for the role of educational attainment in moderating individuals' attitudinal responses to 9/11. In fact, highly educated respondents do not show any significant change in attitudes toward immigration in the aftermath of the attacks, whereas the lower educated reacted with a considerable and significant shift into more negative immigration attitudes. Evidence with respect to individual concerns over xenophobic hostility, however, show a different pattern. Both, low- and high-educated individuals reacted equally strong to the 9/11 attacks by lowering their concerns over xenophobic hostility in Germany. In spite of the double-barrel character of the measure of attitudes toward xenophobic tendencies, this finding casts some doubt on a universal moderating role of education.

Altogether, this study for Germany provides the first causal evidence that the 9/11 terror attacks in the US provoked substantial changes toward more negative immigration-related attitudes within the wider German society. Mixed evidence on the moderating role of education points to the important future research agenda of examining the mechanisms behind the potential effect of education on anti-immigration and anti-foreigner sentiment. Another step for further study would be to probe the influence of social desirability pressures among the highly educated in this context.

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Table 1: Descriptive Statistics

	Sample 2000-2001			Sample 1999-2003		
	All	Pre-9/11	Post-9/11	All	Pre-9/11	Post-9/11
N	34,653	34,046	607	70,799	69,730	1,069
Worries immigration	2.050	2.050	2.044	2.072	2.072	2.028*
	(0.726)	(0.727)	(0.710)	(0.722)	(0.722)	(0.744)
Worries hostility toward foreigners	2.181	2.181	2.163	2.128	2.128	2.112
	(0.679)	(0.680)	(0.641)	(0.666)	(0.667)	(0.655)
Male	0.477	0.477	0.499	0.478	0.478	0.511*
Age	46.546	46.577	44.817*	47.237	47.270	45.065
Ln(net household income)	8.321	8.320	8.412*	8.057	8.056	8.148*
Lower than secondary degree	0.031	0.030	0.040	0.026	0.026	0.039*
Secondary degree	0.801	0.801	0.784	0.803	0.804	0.775*
Tertiary degree	0.168	0.168	0.176	0.171	0.170	0.186
Full-time employed	0.423	0.423	0.433	0.421	0.420	0.431
Unemployed	0.099	0.100	0.091	0.101	0.101	0.102
Other Employment	0.205	0.204	0.252*	0.202	0.201	0.247*
Retired	0.220	0.221	0.191	0.232	0.232	0.186*
Maternity leave	0.020	0.020	0.008*	0.018	0.018	0.007*
In education	0.032	0.032	0.025	0.028	0.028	0.027
Married	0.636	0.637	0.608	0.639	0.639	0.609*
Single	0.230	0.228	0.292*	0.223	0.222	0.280*
Divorced	0.070	0.070	0.059	0.072	0.072	0.071
Widowed	0.064	0.065	0.041*	0.066	0.067	0.040*

Notes: Attitude measures (worries) take a value of 1 = not concerned at all, 2 = somewhat concerned, and 3 = very concerned. An individual is assigned to the pre-9/11 group if she or he was interviewed between January 1, 2001 and September 10, 2001 and to the post-9/11 group if the 2001 interview took place between 12 September and 31 December that year. ∗ Statistically different from pre-9/11 mean at the 5 percent confidence level.

Table 2: Worries about Immigration (Worries about Hostility toward Foreigners) and the 9/11 Attacks – Unbalanced Panel, SOEP 2000 – 2001

	Worries about Immigration			Worries about Hostility		
	OLS	RE	FE	OLS	RE	FE
Post-9/11	-0.073*	-0.082*		0.051	0.042	
	(0.042)	(0.043)		(0.034)	(0.040)	
Year=2001	-0.099***	-0.097***	-0.094***	0.069***	0.071***	0.074***
	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
Year=2001 × Post-9/11	0.129***	0.141***	0.152***	-0.131***	-0.119***	-0.103**
	(0.043)	(0.041)	(0.042)	(0.045)	(0.044)	(0.045)
Constant	2.102***	2.099***	2.098***	2.146***	2.143***	2.144***
	(0.006)	(0.006)	(0.004)	(0.005)	(0.005)	(0.004)
N	34,653	34,653	34,653	34,653	34,653	34,653

Source: SOEP 2000–2001, own calculations.
Notes: Worries about immigration and worries about hostility toward foreigners take a value of 1 = not concerned at all, 2 = somewhat concerned, and 3 = very concerned. Post-9/11 takes a value of 1 for both years (i.e. 2000 and 2001) if the individual was interviewed between January 1, 2001 and September 10, 2001 and 0 between 12 September 2001 and 31 December 2001. Base year = 2000. Standard errors are in parentheses and, in the OLS case, robust to the clustering by individual identification. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Worries about Immigration (Worries about Hostility toward Foreigners) and the 9/11 Attacks – Multiple time periods, SOEP 1999 – 2003

	Worries about Immigration		Worries about Hostility	
	RE	FE	RE	FE
Post-9/11	-0.033		0.044	
	(0.076)		(0.075)	
Year=2000	-0.087***	-0.080***	-0.012*	-0.001
	(0.007)	(0.012)	(0.007)	(0.012)
Year=2001	-0.190***	-0.182***	0.077***	0.098***
	(0.007)	(0.020)	(0.007)	(0.020)
Year=2002	-0.148***	-0.112***	-0.039***	-0.011
	(0.008)	(0.029)	(0.008)	(0.030)
Year=2003	-0.195***	-0.158***	-0.115***	-0.079**
	(0.008)	(0.038)	(0.008)	(0.039)
Year=2000 × Post-9/11	-0.034	-0.047	-0.032	0.002
	(0.077)	(0.080)	(0.078)	(0.082)
Year=2001 × Post-9/11	0.170**	0.171**	-0.308***	-0.259***
	(0.079)	(0.081)	(0.080)	(0.083)
Year=2002 × Post-9/11	-0.002	-0.007	-0.082	-0.056
	(0.078)	(0.081)	(0.079)	(0.083)
Year=2003 × Post-9/11	-0.002	-0.005	-0.076	-0.061
	(0.079)	(0.081)	(0.080)	(0.083)
Male	0.029***		-0.107***	
	(0.009)		(0.008)	
Age	0.005***		0.009***	
	(0.002)		(0.001)	
Age-squared/100	-0.003*		-0.011***	
	(0.002)		(0.001)	
Secondary degree	0.027	0.013	-0.025	0.009
	(0.020)	(0.029)	(0.019)	(0.030)
Tertiary degree	-0.298***	0.018	0.038*	-0.042
	(0.023)	(0.041)	(0.022)	(0.042)
Unemployed	-0.016	-0.004	-0.030***	-0.016
	(0.010)	(0.013)	(0.010)	(0.013)
Other employment	-0.038***	-0.015	0.010	0.000
	(0.009)	(0.011)	(0.008)	(0.011)
Retired	-0.015	-0.042**	-0.002	0.003
	(0.013)	(0.019)	(0.013)	(0.019)
Maternity leave	-0.015	0.006	0.018	0.002
	(0.019)	(0.022)	(0.019)	(0.022)
In education	-0.119***	-0.037*	-0.013	-0.062***
	(0.018)	(0.021)	(0.018)	(0.022)
Single	-0.100***	-0.047*	-0.030**	0.013
	(0.013)	(0.025)	(0.012)	(0.026)
Divorced	-0.023	0.017	-0.037***	-0.027
	(0.014)	(0.024)	(0.013)	(0.025)
Widowed	-0.088***	-0.086**	-0.060***	-0.004
	(0.018)	(0.039)	(0.016)	(0.040)
Ln(net household income)	-0.047***	-0.012	0.006	0.002
	(0.007)	(0.010)	(0.007)	(0.010)
Constant	2.504***	2.817***	2.156***	2.501***
	(0.081)	(0.353)	(0.076)	(0.362)
N	70,799	70,799	70,799	70,799

Source: SOEP 1999–2003, own calculations.
Notes: See Table 2. Control variables additionally include federal state and interview month dummies. Reference groups include female, married, lower than secondary degree, and full-time employment. Fixed effects models include age dummies instead of continuous age variables. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Other Worries and the 9/11 Attacks – Multiple time periods, SOEP 1999 – 2003

	Worries about Economic Development		Worries about Crime in Germany	
	RE	FE	RE	FE
Post-9/11	0.009		-0.025	
	(0.068)		(0.068)	
Year=2000	-0.070***	-0.067***	-0.021***	-0.015
	(0.007)	(0.011)	(0.006)	(0.011)
Year=2001	-0.099***	-0.099***	-0.063***	-0.051***
	(0.006)	(0.019)	(0.006)	(0.018)
Year=2002	0.093***	0.120***	-0.110***	-0.069**
	(0.007)	(0.028)	(0.007)	(0.027)
Year=2003	0.359***	0.385***	-0.170***	-0.123***
	(0.008)	(0.036)	(0.007)	(0.035)
Year=2000 × Post-9/11	-0.103	-0.100	0.008	-0.010
	(0.072)	(0.076)	(0.070)	(0.073)
Year=2001 × Post-9/11	0.092	0.104	0.014	0.010
	(0.073)	(0.078)	(0.071)	(0.075)
Year=2002 × Post-9/11	-0.009	-0.015	-0.001	-0.025
	(0.073)	(0.077)	(0.071)	(0.074)
Year=2003 × Post-9/11	0.026	0.027	0.031	0.009
	(0.074)	(0.078)	(0.072)	(0.074)
Constant	2.132***	2.303***	2.577***	2.298***
	(0.067)	(0.336)	(0.070)	(0.323)
N	70,693	70,693	70,703	70,703

Source: SOEP 1999–2003, own calculations.
Notes: See Table 2. Control variables as in Table 3. Fixed effects models include age dummies instead of continuous age variables. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Effect Heterogeneity by Gender, Age Groups and Education

	Worries about Immigration						Worries about Hostility					
	Male	Female	Age<=35	Age>35	Low Edu	High Edu	Male	Female	Age<=35	Age>35	Low Edu	High Edu
Post-9/11	-0.041	-0.024	-0.123	0.035	-0.064	-0.020	0.001	0.089	0.015	0.072	0.063	0.066
	(0.104)	(0.110)	(0.125)	(0.096)	(0.110)	(0.105)	(0.102)	(0.110)	(0.121)	(0.097)	(0.111)	(0.101)
Year=2000	-0.086***	-0.088***	-0.062***	-0.098***	-0.084***	-0.089***	-0.009	-0.017	0.001	-0.017**	-0.027***	0.018
	(0.010)	(0.010)	(0.013)	(0.008)	(0.009)	(0.012)	(0.010)	(0.010)	(0.013)	(0.009)	(0.009)	(0.012)
Year=2001	-0.185***	-0.196***	-0.163***	-0.201***	-0.183***	-0.192***	0.087***	0.066***	0.097***	0.071***	0.058***	0.111***
	(0.009)	(0.010)	(0.013)	(0.008)	(0.009)	(0.011)	(0.009)	(0.010)	(0.013)	(0.008)	(0.009)	(0.011)
Year=2002	-0.145***	-0.152***	-0.140***	-0.161***	-0.127***	-0.172***	-0.036***	-0.042***	-0.052***	-0.035***	-0.034***	-0.047***
	(0.011)	(0.012)	(0.015)	(0.010)	(0.011)	(0.013)	(0.011)	(0.012)	(0.015)	(0.010)	(0.011)	(0.013)
Year=2003	-0.200***	-0.190***	-0.179***	-0.211***	-0.183***	-0.203***	-0.109***	-0.120***	-0.144***	-0.106***	-0.101***	-0.138***
	(0.011)	(0.012)	(0.016)	(0.010)	(0.011)	(0.013)	(0.011)	(0.012)	(0.016)	(0.010)	(0.011)	(0.013)
Year=2000 × Post-9/11	-0.057	-0.012	0.037	-0.095	0.013	-0.060	0.014	-0.084	-0.044	-0.037	-0.107	0.023
	(0.106)	(0.112)	(0.129)	(0.098)	(0.114)	(0.105)	(0.107)	(0.115)	(0.128)	(0.100)	(0.116)	(0.105)
Year=2001 × Post-9/11	0.189*	0.149	0.239*	0.100	0.243**	0.059	-0.280**	-0.342***	-0.343***	-0.320***	-0.308***	-0.339***
	(0.108)	(0.114)	(0.134)	(0.100)	(0.116)	(0.107)	(0.109)	(0.116)	(0.132)	(0.102)	(0.118)	(0.108)
Year=2002 × Post-9/11	0.078	-0.083	-0.011	-0.037	0.017	0.005	-0.007	-0.158	-0.048	-0.114	-0.148	-0.046
	(0.108)	(0.113)	(0.136)	(0.099)	(0.115)	(0.107)	(0.109)	(0.116)	(0.135)	(0.101)	(0.117)	(0.108)
Year=2003 × Post-9/11	-0.029	0.017	-0.047	-0.036	0.072	-0.083	-0.001	-0.152	-0.165	-0.071	-0.073	-0.136
	(0.109)	(0.114)	(0.141)	(0.099)	(0.116)	(0.107)	(0.110)	(0.116)	(0.140)	(0.101)	(0.118)	(0.108)
Constant	2.507***	2.561***	2.497***	2.387***	2.661***	2.763***	2.163***	2.009***	1.908***	2.075***	2.103***	2.229***
	(0.109)	(0.121)	(0.221)	(0.124)	(0.102)	(0.123)	(0.102)	(0.114)	(0.206)	(0.116)	(0.098)	(0.111)
N	36,941	33,858	19,504	51,295	44,502	26,297	36,941	33,858	19,504	51,295	44,502	26,297

Source: SOEP 1999–2003, own calculations.
Notes: See Table 2. Random effects models. Control variables as in Table 3. High Edu is defined as individual with 12 or more years of education/training.
$* p < 0.10$, $** p < 0.05$, $*** p < 0.01$.

Appendix

Table A1: Three-Way Interaction – 9/11 Effects and the Moderating Role of Education

	Worries about Immigration	Worries about Hostility
Year=2000	-0.066***	-0.033***
	(0.009)	(0.009)
Year=2001	-0.167***	0.052***
	(0.009)	(0.009)
Year=2002	-0.115***	-0.043***
	(0.010)	(0.010)
Year=2003	-0.173***	-0.110***
	(0.010)	(0.010)
High-Edu	-0.185***	0.051***
	(0.013)	(0.013)
Year=2000 × High-Edu	-0.028*	0.047***
	(0.015)	(0.015)
Year=2001 × High-Edu	-0.029**	0.058***
	(0.015)	(0.015)
Year=2002 × High-Edu	-0.062***	-0.003
	(0.015)	(0.015)
Year=2003 × High-Edu	-0.031**	-0.028*
	(0.015)	(0.015)
Post-9/11 × High-Edu	0.011	0.030
	(0.149)	(0.148)
Post-9/11	-0.056	0.033
	(0.106)	(0.105)
Year=2000 × Post-9/11	0.026	-0.079
	(0.110)	(0.111)
Year=2001 × Post-9/11	0.306***	-0.288***
	(0.110)	(0.111)
Year=2002 × Post-9/11	0.022	-0.115
	(0.110)	(0.112)
Year=2003 × Post-9/11	0.078	-0.044
	(0.111)	(0.113)
Year=2000 × Post-9/11 × High-Edu	-0.094	0.093
	(0.156)	(0.157)
Year=2001 × Post-9/11 × High-Edu	-0.278*	-0.056
	(0.154)	(0.156)
Year=2002 × Post-9/11 × High-Edu	-0.010	0.075
	(0.158)	(0.160)
Year=2003 × Post-9/11 × High-Edu	-0.148	-0.083
	(0.159)	(0.161)
N	70,799	70,799

Source: SOEP 1999–2003, own calculations.
Notes: See Table 2. Random effects models. Control variables as in Table 3. High-Edu is defined as individual with 12 or more years of education/training. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.