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Fragile Boys (and Girls)? Determinants and Long-Term Consequences of Socioemotional Development

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Abstract

We analyze the determinants and consequences of socioemotional development (SED) during adolescence. We causally estimate the impact of a large macro shock, the German Reunification, on the SED of East German youths, finding substantial negative effects in the short run. These effects are similar for male and female youths. However, linking changes in SED to behavior, we see stark differences by gender -observing important changes in externalizing behavior and behavioral control problems among males and changes in internalizing behavior among females only. Ultimately, however, the effects on longer-run outcomes (subjective health, wellbeing, education) are grave and similar for both genders.

JEL Classification: D91, J13, J16, J24, I12

Keywords: socioemotional development, gender, uncertainty, behavior, health, educational outcomes

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1 Introduction

There is a growing interest in the importance of socioemotional development (or noncognitive skills) by economists and scientists more generally. From a number of perspectives, the literature has investigated the development and formation of these skills (see, for instance, Cunha and Heckman, 2007; Cunha, Heckman and Schennach, 2010; and Kosse et al, 2020). Important links have been established between socioemotional development and economic and educational outcomes (see, for example, Heckman, Stixrud and Urzua, 2006; Borghans et al., 2008; Almlund et al., 2011; Heckman, Pinto and Savelyev, 2013; Deming, 2017; Jackson et al., 2020; and Bütikofer and Peri, forthcoming). What is less well understood, however, is whether the determinants of socioemotional development differ by gender and whether socioemotional development, and changes in noncognitive skills, manifest differently for males and females in terms of behavior and longer-term outcomes.

Understanding the gender differences in the determinants and consequences of socioemotional development (SED hereafter) is important from an academic and policy perspective. From a biological perspective, the medical literature has well-established evidence in favor of the "fragile males" hypothesis, showing that the male fetus is more at risk than the female fetus, and certain disadvantages exist in utero and continue throughout life (Kraemer, 2000). From a behavioral perspective, males have been found to engage more in unhealthy (or "risky") behavior, which has important consequences for health outcomes, such as the development of cardiovascular disease (Juutilainen et al., 2004). Consistent with the medical literature, in economics, it has been shown that for school-aged children, a worse home or school environment has a stronger impact on disruptive behavior and schooling outcomes for boys (Bertrand and Pan, 2013; Fortin, Oreopoulos and Phipps, 2015; Brenøe and Lundberg, 2017; Autor, Figlio, Karbownik, Roth and Wasserman, 2019) and that early childhood interventions that enrich the environments of disadvantaged children are more affective of the behavior and health outcomes of boys than of girls (Conti, Heckman and Pinto, 2016).

In this paper, we causally estimate the impact of a large exogenous macro shock on the SED of young adolescents. We then link changes in SED to a wide range of behavioral changes (including both *externalizing* and *internalizing* behavior), as

well as long-term consequences for their health, life satisfaction and educational outcomes as young adults. We document that there is an immediate (negative) and sizeable impact on youths' anger, anxiety and self-confidence, which then has long-term negative consequences for their behavior and outcomes. Importantly, we find a gender-neutral impact of the shock on most dimensions of SED. However, focusing on the link between changes in SED and different types of behavior, we see striking gender differences. While changes in SED lead to an increase in the *externalizing* behavior of males, there is no impact on this type of behavior among females. This is consistent with the "fragile males" hypothesis and with gender asymmetries in "acting out" when adolescents are subjected to similar adverse circumstances. Similarly, when we examine the impact of SED on behavioral "control" problems, such as alcoholism and other types of risky behavior, we find that changes in SED are more strongly associated with longer-run problems among male than among female youths and young adults. However, when we investigate *internalizing* behaviors (such as suicidal thoughts), which are often linked to depression and other mental-health problems, we see that changes in SED are strongly associated with increases in internalizing behavior, but only for females.[1] By examining a wide range of outcomes, we show that changes in SED play an important role for both genders. In terms of more general long-term outcomes, such as subjective health and life satisfaction, as well as objective measures of educational success, we find similar impacts on males and females, suggesting that both genders are impacted, albeit on somewhat different dimensions, by changes to their SED. From a policy perspective, these results are key since a primary focus on conduct in the classroom, such as attendance and disciplinary incidents (e.g., fighting and disturbances), would largely measure *externalizing* behavior, biasing attention towards the behavior of male youths and thereby fostering investments in skills and SED that put a stronger focus on males than on females.

In our study, we estimate changes in the SED of adolescents using the natural

[1] According to the Centers for Disease Control and Prevention (CDC), suicide attempts and thoughts have nearly doubled for US children and teenagers over the last decade, with the rate of 6.7 suicides per 100,000 people in 2007 increasing to 11.8 suicides per 100,000 people by 2017. The agency determined that suicide is the second leading cause of death among teenagers aged 15 to 19. Additionally, for the first time in more than thirty years, mental-health problems have displaced physical conditions as the leading causes of disabilities among U.S. children (Slomski, 2012).

experiment of German Reunification in October 1990. Reunification prompted some of the most important structural changes in Germany's recent history (see Hunt, 2002, and Krueger and Pischke, 1995, for a detailed overview). In particular, East Germany transitioned from a socialist system with a planned economy to a capitalistic and democratic system in line with that of West Germany in a very short time period. The enormous and rapid economic, cultural and political changes implied a drastic rise in uncertainty in the economic and social environment.[2] Work in psychology (see, for instance, Kirkcaldy, Trimpop, and Furnham, 1999; Krauss and Faas, 1994; and Schmitt and Maes, 1998) documents that after Reunification, East German adults exhibited substantially higher stress and anxiety levels, with important implications for their mental wellbeing, and the incidence of suicides increased. Among other channels, the changes and the resulting adaptive pressures, as well as the political revolution in East Germany threatened individuals' psychological identity. The focus of this paper is on East Germans during their adolescence – a particularly relevant time for socioemotional development – and, more specifically, the short-run impact of the large shock on their SED and the longer-run implications for important behavioral outcomes as well as their health, wellbeing and educational success as young adults.

Using detailed annual individual-level data on two cohorts of youths in East Germany over several years–before and after Reunification–when the individuals were aged 9 to 21, we causally estimate the influence of the regime change on youths' SED (as measured by their anger, anxiety and self-confidence). We then link SED to later behavioral, health and educational outcomes. More specifically, we apply a difference-in-differences (DID) framework that uses variation in the timing of Reunification for the two cohorts of students, who had a three-year age gap, and analyze the change in SED of the younger cohort in the short period before and after Reunification, when the cohort was aged 12/13 and 13/14, using as the counterfactual trend the evolution of the older cohort's SED between the same ages (before Reunification). To understand the impact of SED on students' later outcomes as young adults (aged 18 to 21), we link the changes in SED

[2]Shortly after Reunification, East Germany experienced a sharp rise in unemployment. According to Krueger and Pischke (1995) and Hunt (2008), the number of people in employment decreased by up to 3.3 million from 1989 to 1992, and the unemployment rate rose to more than 15 percent in East Germany in the mid-nineties.

to externalizing (fighting, destroying things) and internalizing (suicidal thinking) behaviors as well as to behavioral control problems (alcoholism and smoking), health (subjective health and life satisfaction) and education (academic grade point averages and performance on the college-entrance exam).

We show that the large macro shock of Reunification had substantial negative effects on youths' socioemotional skills and psychosocial functioning. In particular, Reunification led to increases of 33 and 36 percent of a standard deviation in anger and anxiety levels, respectively, while it decreased youths' self-confidence by more than 40 percent of a standard deviation. Importantly, these negative effects are present for both male and female youths. Contrary to the belief that boys are more strongly affected by negative changes to their environment, we show that the anger and anxiety levels of boys and girls increased similarly, while self-confidence decreased for both but even more strongly for girls.

We next document that changes in SED for adolescents have important implications for their young adulthood. We show that changes in SED are associated in an important way with longer-run *externalizing* behavior (fighting and destroying property), *internalizing* behavior (suicidal thoughts and their frequency) and *behavioral control* problems (alcohol and cigarette consumption). However, there are striking gender differences in these links. While we see a change in externalizing behavior only for males, as well as more negative behavioral control problems, we see a change in internalizing behavior only for females. Analyzing the association between SED and longer-run global measures on life satisfaction, wellbeing, and objective academic success, we find that all these measures are gravely affected by a negative change in SED and in a very similar way for both genders. Our findings are, therefore, consistent with the "fragile males" hypothesis in that adverse shocks impact boys' disruptive behavior and behavioral control problems. However, we also find evidence to suggest that negative shocks affect girls on important mental-health dimensions, and ultimately, they appear to have similar consequences for longer-run health, life satisfaction and educational success.

Looking more closely at the different components of SED, we show that an increase in anger is strongly related to youths' longer-run propensity towards "fighting" and "destruction of property", which is entirely driven by males. Turning to behavioral control problems, we find that changes in anger are strongly related

to young adults' propensity to smoke cigarettes and consume heavy quantities of alcohol, and again the effects are mostly driven by males. However, in terms of the effects on suicidal thoughts and the persistence of such thoughts, we see that all SED components (changes in anger, anxiety and self-confidence) play a role, albeit much more strongly for females. With respect to health outcomes, we find that all SED components are linked to life satisfaction and subjective wellbeing. Increased anger and anxiety and decreased self-confidence are all linked to worse health outcomes. This is the case for both males and females. Finally, in terms of educational attainment, increased anger and anxiety and lower self-confidence are associated with lower GPAs in German and math, as well as a lower probability of completing the entrance requirement for college, the Abitur degree, and again the effects are very similar for males and females.

2 Background

Until 1945, East and West Germany were united as a single country. When separation occurred after Germany's defeat in the Second World War, it was exogenously imposed by the winning Allies. In the fall of 1989, change swept through Eastern Europe and led to the fall of the Berlin Wall in November 1989. On October 3, 1990, East Germany joined the Federal Republic of Germany (FRG), creating a sovereign unified German state ("Reunification"). Importantly, the former German Democratic Republic (GDR), instead of experiencing a change of government within its borders or independence like other countries in this area, ceased to exist as a separate state. In this process, East Germany switched from state socialism to liberal democratic capitalism in a short period of time and without a gradual transition.

This large and unexpected change in the entire economic and political system created a substantial amount of uncertainty. Upon Reunification, the economic system in East Germany was replaced and led to a substantial rise in unemployment (Hunt, 2008; Krueger and Pischke, 1995).[3] Bhaumik and Nugent (2011), for example, show that economic uncertainties (especially employment-related un-

[3]During state socialism under the GDR, there was no official unemployment; i.e., people were employed even when their productivity was low, which changed upon Reunification.

certainty) driven by Reunification led to an important decrease in childbirths. In general, the consequences of Reunification had important effects on individuals' stress levels and wellbeing. Psychologists have shown that Reunification led to substantially higher stress levels related to the adaptive pressures associated with the changes as well as the increased threat of unemployment (Kirkcaldy, Trimpop, and Furnham, 1999). Krauss and Faas (1994), among others, note that beyond the changes in economic pressure, the political revolution in East Germany threatened individuals' psychological identity and the previously held notion that individuals have only one reality, which could lead to increased anxiety. Krauss and Faas (1994) conducted extensive interviews during which they saw "very intense and powerful feelings", which ranged from "visible euphoria about the anticipation of more closeness and new possibilities for the relationships to anxiety over being accepted or outright panic."

Our study focuses on the impact of Reunification on anxiety, anger and self-confidence among adolescents and changes in these conditions shortly before and after Reunification. We causally estimate the impact of a macro shock on these youth's social-emotional development as well as the long-run consequences of changes in these psychological measures.

3 Data

3.1 Longitudinal Study of Students in East Germany

The data used in the following analysis come from the Longitudinal Study of Students (1985-1995). The study followed two parallel cohorts of students in East Germany from 1985 to 1995, when students are between 9 and 21 years of age. The goal of the study was to understand the determinants of the development of cognitive abilities, of socioemotional skills, and of mental health as well as of values, goals, and attitudes during childhood and adolescence until (young) adulthood. The data are ideal for our purpose in that the survey followed the same individuals from before to after German Reunification, covering a wide range of topics, including educational achievement and attainment, as well as socioemotional development, (psychological) wellbeing measures, and health-related behaviors and

outcomes.

Importantly, the survey asked students about their socioemotional development and their psychological wellbeing at several points in time before and after Reunification, allowing us to study whether and to what extent these measures relate to long-run outcomes. Given the longitudinal nature of the study, we can link exogenously driven changes in socioemotional development (in particular anxiety, anger and self-confidence) to longer-run, post-Reunification behavioral, educational and health outcomes when students are young adults.

3.2 Variable description

In Table 1a, we describe the three main variables used in our short-run analysis. Our main outcome of interest is the socioemotional development (SED) of adolescents, as measured by their levels of anger, anxiety, and self-confidence. We use students' level of agreement with items related to the different psychological measures. Possible answers for each item range from 4 ("very strongly agree") to 1 ("do not agree at all"). In the case of anger and anxiety, we use factor analysis to combine the different items, since there is more than one item available.[4] All measures are standardized to be able to interpret regression coefficients in terms of standard-deviation changes.

In Table 1b, we describe the long-run outcomes, measured when individuals are young adults aged 18 to 21 and linked to their early (exogenous) changes in psychological wellbeing around the time of Reunification. We classify these outcomes into the following five categories: *externalizing* behavior, *internalizing* behavior, *behavioral control* issues, *health* outcomes, and *educational* outcomes.

In terms of externalizing behavior, we measure self-reported deviant behavior during the past 12 months. There are two main measures: (1) *Physical fighting*,

[4] In terms of the variable anger, individuals are asked about their agreement with the following statements: *"I have destroyed things out of anger"* and *"When provoked, I lose my temper"*. In terms of the anxiety variable, individuals are asked about their agreement with the following two statements: *"Sometimes I am too nervous to speak in class"*, and *"I am afraid of being laughed at by my classmates."* Self-confidence is measured as the extent of agreement with the statement *"I struggle with low self-confidence."* Because in the raw data higher-value answers imply lower self-confidence, we reverse the scale so that we can interpret higher values as higher self-confidence.

which captures whether the individual has deliberately beaten or hurt someone, and (2) *Destroy property*, which captures whether the individual has deliberately destroyed or damaged private or public property.

For internalizing behavior, we measure individuals' suicidal tendencies, where (1) the *Suicidal thoughts* variable captures whether the individual has thought of committing suicide at least once and (2) the *Repeated suicidal thoughts* variable indicates whether the individual has had thoughts of committing suicide more than once.

With respect to behavioral control problems, we focus on (1) *Alcohol consumption*, where we can measure the extent of consumption (specifically, (a) regular alcohol consumption and (b) heavy alcohol consumption) over the past three months, and (2) *Cigarette smoking*, which indicates whether the individual is a regular smoker.

Physical health and general wellbeing are captured using measures of (1) *Subjective health*, an indicator that ranges from 5 ("very good") to 1 ("poor") and refers to the current health status as perceived by the young adult, and (2) *Life satisfaction*, which measures the individual's life satisfaction in general. It is defined in four categories (where 1 is "not at all satisfied" and 4 is "completely satisfied").

Finally, we can measure academic outcomes using (1) the *Student GPA* in Math and German (where 1 is the lowest grade and 5 is the highest) during 10th grade, i.e., the highest grade of mandatory education, and (2) the obtainment of the *"Abitur"*, the entrance certificate necessary for admission to university.

3.3 Summary statistics

In Table 2a, we present the summary statistics for the three SED measures, by gender, when the youths are between ages 12 and 14. The first column presents the averages for girls, the second column presents the averages for boys, and the third column tests for a difference between the two. Overall, boys, on average, report higher levels of anger and higher levels of self-confidence than girls at the same age. Girls, however, report, on average, higher levels of anxiety than boys do.

In Table 2b, we similarly report the summary statistics for each of the long-

run outcomes when individuals are aged 18 to 21. The prevalence of externalizing behavior, in terms of physical fighting and property destruction, is higher for young men than for young women at the same age. However, internalizing behavior, in terms of suicidal tendencies, is higher for young women than for young men. Among men, for instance, approximately 10 percent have gotten into a physical fight, compared with only 2-3 percent of women. With respect to suicide, while only 19 percent of men have thought about suicide, more than 34 percent of women have had these thoughts.[5]

With respect to behavioral control problems, the gender differences are less stark than those that appear in terms of externalizing and internalizing behavior. While smoking and regular drinking are similar by gender, heavy drinking is more prevalent among young men. In terms of smoking cigarettes, on average, 36 to 38 percent of young adults consume tobacco. In terms of alcohol consumption, approximately 60 to 70 percent of men and women drink regularly. However, while 55 percent of men are heavy drinkers, this is the case for only 38 percent of women.[6]

With respect to health and educational outcomes, we similarly see that there are no strong gender differences. Both young men and women report similar levels of life satisfaction. However, young men report a higher level of subjective

[5]In Appendix Table A.1, we compare our measures of externalizing and internalizing behaviors with similar measures from a US survey targeted at the surveillance of risky behaviors among youths, the"Youth Risk Behavior Surveillance" survey of 12th graders from 1995. Despite the fact that the exact survey questions and reference periods differ somewhat (and the US sample is slightly younger), the average incidence and, in particular, patterns in terms of gender differences are similar. For example, in our survey of 18- to 21-year-old East Germans, the likelihood of female (male) youths getting into fights is 2-3 percent (10 percent). A similar gap exists among the 18-year-old students in the US sample, with 6 percent (16 percent) for females (males). In terms of suicidal thoughts, in our sample, 34 percent (19 percent) of female (male) youths report having *ever had thoughts* about committing suicide at least once, while 24 percent (16 percent) of US 12th graders report having *seriously thought* about attempting suicide *in the past 12 months* (i.e. the definition is stricter and the reference period shorter).

[6]Also in terms of these measures of behavioral control problems, the average incidence and gender differences are similar in our survey and the US survey (see Appendix Table A.1). In our survey, approximately 36 to 38 percent of female and male youths report smoking (regularly and occasionally), while around 34 to 42 percent of US 12th graders report smoking at least once in the past 30 days. In terms of alcohol consumption, 38 percent (58 percent) of 18- to 21-year-old female (male) youths in our sample report consuming alcohol at least once per week, while 32 percent (47 percent) of American females (males) drank at least 5 drinks in one occasion during the past 30 days.

health. In terms of academic performance, we see no gender difference in taking the university entry exam (the Abitur), with approximately 40 to 45 percent taking it. Looking at academic performance in grade 10 (i.e. in the last year of mandatory education), we see that while girls tend to perform better in German, there is no significant difference in math performance.

4 Empirical Methodology

4.1 Short-run effects of Reunification on SED

We causally estimate the effect of a macro shock on socioemotional development (SED) using the natural experiment of German Reunification in October 1990, whereby students' birth cohort and the timing of Reunification jointly determine their exposure to the change in regime. We use this variation to identify the effect of regime change on three dimensions of SED: anger, anxiety and self-confidence. In particular, we analyze the change in SED of the younger cohort before and after Reunification, using as the counterfactual trend the evolution of the older cohort's noncognitive skills at the same age before Reunification. Importantly, the regime change allows us to isolate a change in SED that is not driven by age effects. In a second step, we study how these changes in SED translate into changes in longer-term behavior and outcomes.

The survey follows two cohorts – one being three years older than the other – between 1985 and 1995. We exploit the comparability across cohorts at the same age and the structure of the data, characterized by administration at regular intervals of the same survey questions to both groups of students, to identify the effect of regime change on SED. The "treatment" of interest is regime change, with the treatment group being the younger cohort. The older cohort serves as the "control" group, capturing how socioemotional skills would have evolved if there had been no Reunification. For instance, the older cohort at age 14 (in 1988) is still in the pre-Reunification period, while the younger cohort at age 14 (in 1991) is in the post-Reunification period.

We estimate the change in SED for the younger cohort from before to after Reunification (i.e., between 1989 and 1991), using the older cohort as a control

for the trend across the same ages for the younger cohort. The empirical design is such that we focus closely on the ages directly pre- and post-Reunification for the younger cohort, i.e., at ages 12 to 14, which allows us to identify the short-run effects of Reunification. More generally, we estimate the following equations:

$$SED_{ic} = \beta_0 + \beta_1 T_i + \beta_2 P_{ic} + \beta_3 (T_i P_{ic}) + \beta_4 F_i + X_{ic}\delta + \epsilon_{ic} \tag{1}$$

$$SED_{ic} = \beta_0 + \beta_2 P_{ic} + \beta_3 (T_i P_{ic}) + D_i + \epsilon_{ic} \tag{2}$$

where SED_{ic} is the measure of the SED of student i in cohort c. T_i is a dummy indicating "treatment" (i.e., taking the value of one if the individual belongs to the younger cohort and zero otherwise), and P_{ic} indicates the "post" period, representing the student's age. Since we restrict the analysis to ages 12 to 14, P_{ic} is a dummy variable that takes the value of one if the age of the individual is 14 (where age 12 is the excluded category); F_i is a gender dummy taking the value of one if the student is female. X_{ic} is a vector of predetermined individual-specific characteristics. In a second specification, we include individual fixed effects D_i (see equation (2)).

To understand the gender differences in impact on SED, we estimate equations (1) and (2) by fully interacting the specification with the female dummy F_i, leading to:

$$\begin{aligned} SED_{ic} = \beta_0 + \beta_1 T_i + \beta_1^F (T_i F_i) + \beta_2 P_{ic} + \beta_2^F (P_{ic} F_i) \\ + \beta_3 (T_i P_{ic}) + \beta_3^F (T_i P_{ic} F_i) + \beta_4 F_i + X_{ic}\delta + (X_{ic} F_i)\delta^F + \epsilon_{ic} \end{aligned} \tag{1.1}$$

$$SED_{ic} = \beta_0 + \beta_2 P_{ic} + \beta_2^F (P_{ic} F_i) + \beta_3 (T_i P_{ic}) + \beta_3^F (T_i P_{ic} F_i) + D_i + \epsilon_{ic} \tag{2.1}$$

The main coefficients of interest are β_3 and β_3^F, which capture the effect of a change in regime (β_3), and whether this effect differs by gender (β_3^F). The interaction term ($T_i P_{ic}$) takes the value of one if a student is from the younger cohort and is 14 years old, which is in the post-Reunification period for the young cohort, while $T_i P_{ic} F_i$ takes the value of one if the student is female, in the young cohort and in the post-Reunification period. All equations are estimated using

ordinary least squares with standard errors clustered at the individual level.

One possible way to apply the difference-in-differences approach is to compare the young and the old cohorts in the same years before and after Reunification. However, the older cohort is also likely affected by Reunification, such that we might expect a response within the "control" group as well. In our application of the difference-in-differences approach, we compare the younger and the older cohorts at the same age. In this way, the older cohort is not affected by Reunification since the cohort is at the relevant age before Reunification, which allows us to control for age (life-cycle) effects, which are likely to be particularly important during adolescence. More specifically, we control for how the younger cohort's socioemotional development would have developed without Reunification by making use of the change in these measures within the control group at the same ages.

Under the parallel trend assumption, it is assumed that without German Reunification, the younger cohort's psychological development between ages 12 and 14 would have been the same as that of the older cohort between ages 12 and 14. We test this parallel trend assumption by conducting a placebo test in which we compare the evolution of the SED for the younger cohort in the preperiod with that of the older cohort.

4.2 Linking SED to long-run behavior and outcomes

In this section, we discuss how we study the link between SED and long-run behavior and outcomes. We measure whether anger, anxiety, and self-confidence – and changes in these variables – impact students' longer-run externalizing/internalizing behavior, as well as behavioral control issues, health and wellbeing, and academic performance, and whether this relationship differs by gender.

We estimate the following equations:

$$B_{ic} = \gamma_0 + \gamma_1 \Delta SED_{ic} + \gamma_2 SED_{ic,pre} + \gamma_3 T_i + \gamma_4 F_i + \epsilon_{ic} \tag{3}$$

$$\begin{aligned} B_{ic} = \gamma_0 + \gamma_1 \Delta SED_{ic} + \gamma_1^F (\Delta SED_{ic} F_i) + \gamma_2 SED_{ic,pre} \\ + \gamma_2^F (SED_{ic,pre} F_i) + \gamma_3 T_i + \gamma_3^F (T_i F_i) + \gamma_4 F_i + \epsilon_{ic} \end{aligned} \tag{3.1}$$

where B_{ic} is an indicator for a certain behavior (or a measure of health, well-being or academic performance) of individual i in cohort c, $SED_{ic,pre}$ captures the level of a certain socioemotional skill at age 12 (i.e., before Reunification for both cohorts), and ΔSED_{ic} captures how a certain SED indicator changed from age 12 to age 14 (i.e., before vs. after Reunification for the young cohort). The coefficient of interest is γ_1, which measures how an exogenous change in SED affects individuals' later behavior and outcomes. Equation (3.1) repeats the exercise but measures the heterogeneity by gender.

5 Results: Short-run Effects of Reunification on SED

The macro shock of Reunification had drastic effects on adolescents' SED and psychological wellbeing. In Table 3, we present the impact of Reunification on anger, anxiety and self-confidence. According to columns (1) and (2), Reunification increased the level of anger by 33 percent of a standard deviation. In particular, those in the younger cohort have a level of anger that is 33 percent of a standard deviation higher after Reunification than before, after we control for how their anger level would have evolved without Reunification between the relevant ages. The counterfactual anger levels are measured by subtracting the change in anger level for the older cohort between the same ages (during the period before Reunification). The results are very similar without and with controls for individual fixed effects (compare columns (1) and (2)). Similarly, Reunification led to substantially increased levels of anxiety among adolescents, with an increase of 36 percent of a standard deviation (columns (3) and (4)), and their levels of self-confidence decreased by 44 percent of a standard deviation (columns (5) and (6)).

In Table 4, we analyze whether the macro shock affects the SED of adolescent boys and girls differently. Columns (1) to (4) show that (with and without fixed effects), anger and anxiety increase similarly for both genders. This finding is important in that when we focus only on changes in *behavior* (such as disruptive and aggressive behavior) following a major life disruption, those changes are predominantly observed in boys, while girls appear to be unaffected (or less affected).

This might give the impression that the SED of boys is more severely affected by adverse shocks. However, by directly measuring SED, we show that the effects are similar for both girls and boys. As we will discuss in the next section, what differs by gender is how SED is *linked* to different types of behavior.

Columns (5) and (6) show that compared with that of adolescent boys, the self-confidence of girls is more negatively impacted by the macro shock, in that girls' self-confidence levels decrease by 62 percent of a standard deviation but only by 23 percent of a standard deviation for boys. This highlights again that, if anything, girls are more strongly affected by the shock than boys.

In Panel B of Tables 3 and 4, we conduct a placebo experiment to test whether the pretrends in SED are similar for the two cohorts. We estimate a differences-in-differences specification (without and with fixed effects) comparing the evolution of both groups' SED before age 12. The results are consistent with the parallel trend assumption in that the pretrends for both cohorts are very similar (the estimated coefficient is close to zero and not significantly different from zero). This lends support to our causal interpretation of the effect of Reunification on youths' socioemotional skills.

6 Results: Long-run Outcomes – Behavior, Health and Wellbeing

In this section, we study how the changes in socioemotional skills among adolescents due to the macro shock transmit to their longer-run outcomes as young adults. In particular, we look at their behavior (externalizing, internalizing and control issues), their psychological health and wellbeing, and their long-run academic outcomes.

To analyze how the effect of the macro shock on SED is transmitted to longer-run outcomes, we link the change in each of the three socioemotional indicators (anger, anxiety, and self-confidence) at the ages after versus before Reunification (Post-Pre) to outcomes approximately five years later when the youths have become young adults (ages 18 to 21). In each specification, we investigate the overall impact, as well as the differential impact by gender. In all specifications, we

control for the pre-Reunification level of socioemotional skills, a cohort ("treatment") dummy and a gender dummy, and in the columns with gender interactions (columns (2), (4), and (6)), we also interact each of these controls with the gender dummy.

We present the results in terms of externalizing and internalizing behavior and behavioral control problems in Table 5 and the results for health, wellbeing and longer-run educational outcomes in Table 6, displaying only the main coefficients of interest, i.e., the coefficients on the change in the socioemotional indicators, to analyse the impact on long-run outcomes, and the coefficients on the interaction of the change in the socioemotional indicators with gender (for the full set of coefficients for each of the longer-run outcomes, see Online Appendix Tables A2 to A13). Columns (1) to (6) refer to the three socioemotional indicators (with the main effect of the change in anger in column (1) and female interaction in column (2), the main effect of the change in anxiety and female interaction in columns (3) and (4), and the main effect of the change in self-confidence and female interaction in columns (5) and (6)). The different long-run outcomes are displayed in different rows. For example, in Table 5, externalizing behaviors such as physical fights and destroying property appear in rows (1) and (2), internalizing behaviors such as suicidal thoughts and repeated suicidal thoughts in rows (3) and (4) and behavior control problems such as regular and heavy alcohol consumption and cigarette smoking in rows (5) to (7).

6.1 Externalizing Behavior

To understand the impact of changes in SED on externalizing behavior as a young adult, we take into account two main measures: (1) *Physical fighting*, which captures whether the individual has deliberately beaten or hurt someone, and (2) *Destroying property*, which captures whether the individual has deliberately destroyed or damaged private or public property.

Table 5, row (1), shows that the level of physical fighting is strongly linked to changes in anger (columns (1)). In particular, a one-standard-deviation change in anger post- versus pre-Reunification increases the likelihood of physical fighting by 4 percentage points (significant at the one percent level). Since approximately

8 percent of youths engage in physical fighting, this is equivalent to a 50 percent increase in physical fighting. This regression controls for the pre-Reunification level of anger, which is also strongly correlated with longer-run physical fighting, that is, a pre-Reunification level that is one standard deviation higher increases longer-run physical fighting by 4.6 percentage points (see Online Appendix Table A.2 for the full set of coefficients).

While male and female youths' socioemotional indicators (in particular anger and anxiety) are similarly affected by Reunification, the change in anger relates to the likelihood of physical fighting as a young adult only for males. The coefficient on the interaction of the change in anger with the female dummy is -5.3 percentage points (significant at the 5 percent level) and thus nearly as large as the main coefficient on the change in anger (6.8 percentage points). From columns (3) to (6), we see that changes in anxiety and self-confidence do not influence the level of physical fighting, with coefficients close to zero.

The results in terms of destroying property are very similar (see row (2) of Table 5 and Online Appendix Table A.3 for the full set of coefficients), in that engaging in the destruction of property is strongly linked to changes in anger (see column (1)), but only for males (see column (2)). In particular, a one-standard-deviation increase in anger increases the likelihood of destroying property by 4 percentage points in the full sample (significant on one percent). This effect is almost entirely driven by males, whose likelihood increases by 7 percentage points (significant at the one percent level), while the coefficient on the female interaction is -0.056 (significant at the 5 percent level). Changes in anxiety and self-confidence do not influence the incidence of property destruction in the pooled sample (see columns (3) to (6)).

To conclude, in terms of the impact of changes in SED on externalizing behavior among young adults, we find that the key relevant psychological measure is anger, which is linked to fighting and property destruction, but only for young men.

6.2 Internalizing Behavior

To understand the impact of adverse shocks in adolescence on internalizing behavior, we measure individuals' suicidal tendencies, where (1) the *Suicidal thoughts*

variable captures whether the individual has thought of committing suicide at least once and (2) the *Repeated suicidal thoughts* variable indicates whether the individual has had thoughts of committing suicide more than once. In Table 5, rows (3) and (4), we show that unlike the externalizing behavior effects, any impact of the shock on internalizing behavior is almost entirely driven by female youths, and all three socioemotional indicators are related to the longer-run propensity towards suicidal thinking (see Online Appendix Tables A.4 and A.5 for the full set of coefficients).

Row (3) in Table 5 (columns (1) and (2)) shows that a one-standard-deviation increase in anger post- versus pre-Reunification increases the likelihood of suicidal thinking by 7 percentage points (equivalent to a 41-percent increase and significant at one percent). This effect does not significantly differ according to gender, but the point estimate is twice as large for females. From columns (3) to (6), however, we do see that changes in anxiety and self-confidence are only related to suicidal thoughts for young women. A change in anxiety level of one standard deviation increases the likelihood of experiencing suicidal thoughts by 4 percentage points (significant at the 5 percent level). This is entirely driven by females (see column (4)), for whom the coefficient on the interaction term is 7 percentage points (while the main effect is zero), equivalent to an increase of 24 percent in females' likelihood of experiencing suicidal thoughts. Moreover, a fall in self-confidence is strongly and significantly related to longer-run suicidal thinking. A one-standard-deviation decrease in self-confidence increases the likelihood of suicidal thinking by 5 percentage points (significant at the 5 percent level). Again, this effect is entirely driven by young women, for whom the coefficient on the interaction term is -11 percentage points (while the main effect is zero), equivalent to an increase in the likelihood of experiencing suicidal thoughts of 38 percent (significant at the one percent level).

In Table 5, row (4), we see similar patterns when we focus instead on the likelihood of having repeated suicidal thoughts. Increases in anger or anxiety and decreases in self-confidence are linked to experiencing (repeated) suicidal thoughts in young adulthood, but only for females.

6.3 Behavioral Control Problems

In this section, we analyze the effect of changes in SED on later engagement in "risky" behavior – often referred to in the psychology literature as behavioral control issues. We focus on (1) *Alcohol consumption* over the previous three months, distinguishing between regular (versus irregular or no) alcohol consumption and heavy drinking (versus no heavy drinking), and (2) *Cigarette smoking*, indicating whether the individual is a regular smoker.

Table 5, rows (5) and (6), displays the effect of changes in anger, anxiety and self-confidence on alcohol consumption.[7] We find that a change in anger is positively related to regular alcohol consumption, leading to an increase of 5 percentage points, but only for young men. When focusing on heavy alcohol consumption, we see even stronger effects. In particular, a one-standard-deviation increase in anger post- versus pre-Reunification leads to an increased likelihood of heavy alcohol consumption of 7 percentage points for males, while the coefficient on the interaction term of the change in anger with the female dummy is -6 percentage points (albeit not significant).

In terms of the effect of changes in SED on longer-run smoking behavior (see Table 5, row (7)), we find that the change in anger post- versus pre-Reunification is strongly related to regular cigarette consumption. In particular, a one-standard-deviation change in the degree of anger increases the likelihood of smoking by 6 percentage points (equivalent to an increase of 17 percent and significant at 1 percent).

As in the cases of the other types of behavioral control problems and of externalizing behavior, the relationship between the change in anger and the likelihood of smoking is strongly driven by males, whose likelihood of smoking increases by 9 percentage points when anger increases by one standard deviation, while the coefficient on the change in anger interacted with a female dummy is -5 percentage points. Additionally, as with externalizing behavior, changes in anxiety and self-confidence are generally not related to longer-run behavioral control problems.

[7] The full set of coefficients for behavioral control problems can be found in Online Appendix Tables A6 to A8.

6.4 Health and Wellbeing

In this section, we relate changes in socioemotional development due to Reunification to longer-run health and life satisfaction measures. Unlike the behavioral measures, these measures potentially provide a useful summary of individual well-being. We consider two measures: (1) *Subjective health*, which refers to the current health status as perceived by the young adult, and (2) *Life satisfaction*, which measures the individual's life satisfaction in general.

For both measures, we find that changes in all SED measures are linked to later health/wellbeing outcomes (see Table 6, rows (1) and (2)).[8] We find substantial negative effects of increases in anger and anxiety and decreases in self-confidence on longer-run subjective health and life satisfaction. In the case of subjective health, a one-standard-deviation increase in anger post- versus prereunification decreases subjective health by 12 percent of a standard deviation, an increase in anxiety of the same magnitude decreases young adults' health status by 8 percent of a standard deviation and a one-standard-deviation decrease in self-confidence decreases subjective health by 9 percent of a standard deviation. Similarly, for life satisfaction, an increase in anger of one standard deviation reduces life satisfaction by 10 percent of a standard deviation, while similar increases in anxiety decrease satisfaction by 12 percent of a standard deviation. A fall of one standard deviation in self-confidence reduces life satisfaction by 8 percent of a standard deviation.

Interestingly, the effects are similar for males and females. For subjective health as well as life satisfaction, most of the interaction terms with gender are close to zero and not significant (columns (2), (4) and (6)), with the exceptions of anxiety being more strongly linked with subjective health for women and self-confidence being more strongly linked with life satisfaction for women (both interactions are only marginally significant at 10 percent). Thus, while changes in SED due to adverse shocks are linked to behaviors (whether externalizing or internalizing) in very different ways for males and females, their longer-run impact on health and wellbeing appears to be very similar.

[8]The full set of coefficients can be found in Online Appendix Tables A9 and A10.

6.5 Long-run Academic Outcomes

We have shown so far that causal changes in socioeconomic development affect longer-run behaviors and measures of health and wellbeing. In this last section, we ask whether changes in SED among adolescents have lasting economic impacts. In particular, we analyze the effects of changes in SED on longer-run academic performance and individuals' likelihood of completing the Abitur degree, which is the entrance ticket to university and thus ultimately highly relevant for success in labor and marriage markets (see Card, 1999, for a survey on the returns to education in the labor market and Kaufmann, Messner and Solis, 2015, on the returns to education in the marriage market).

In Table 6, rows (3) and (4), we display the effect of a change in socioemotional indicators on German and math grades in grade 10, which is the last grade of compulsory education, so that we have data on the performance for all individuals.[9] Changes in anger and anxiety are negatively related to individuals' GPA. A one-standard-deviation increase in anger (anxiety) decreases the grade in German by 9 (10) percent of a standard deviation. The effects run in the same direction for math but are not statistically significant. Changes in self-confidence are not significantly related to German or math grades for the pooled sample.

These effects are relatively similar for female and male youths (only one of the six gender interactions is significantly different from zero). One notable difference is that a reduction in self-confidence is linked to a worse German grade, but only for female youths. In particular, a one-standard-deviation decrease in self-confidence reduces the German grade of female adolescents by 21 percent of a standard deviation but has no effect on male youths. Increases in anger, on the other hand, appear more strongly linked to worse math grades for male youths (a one-standard-deviation increase in anger reduces the math grade by 13 percent of a standard deviation), while the female interaction is +11 percent (albeit not significant), so that there is no significant effect for females.

Lastly, we investigate the longer-run effects of the change in SED on individuals' likelihood of obtaining the "Abitur", which is the school-leaving certificate for

[9]The full set of coefficients on long-run academic outcomes can be found in Online Appendix Tables A11 to A13.

the highest educational track, namely, the academic track, and a requirement for university entry. For the likelihood of Abitur completion, we find that changes in anger and anxiety have substantial and significant effects on the likelihood of Abitur completion (see Table 6, row (5)). A one-standard-deviation increase in anger (anxiety) decreases the likelihood of obtaining the Abitur by 4.4 (5) percentage points, which is equivalent to a decrease of 18 (20) percent. The effects of changes in anger and anxiety on Abitur completion are very similar for males and females.

7 Conclusion

In this paper, we identify the long-run impacts of a macro shock on young adults' behaviors as well as health and educational outcomes, propagated via causal changes induced by the shock to their socioemotional development as adolescents. We document that short-run effects on socioemotional development, as well as longer-run effects on health, wellbeing and educational success, are similar for both girls and boys, despite the common perception that males are more strongly impacted by (negative) circumstances or changes in their environment. While our results support the "fragile male" hypothesis if attention is restricted to certain behaviors/outcomes, by broadening our focus, we show that negative effects on socioemotional skills *manifest* themselves in very different ways by gender. In particular, adverse shocks and circumstances negatively affect externalizing and self-control (risky) behaviors, but only (or mostly) for boys, as predicted by the "fragile male" hypothesis. However, it is important to take into account that for girls (and only for them), internalizing behaviors related to mental-health problems are instead strongly impacted. Ultimately, in the longer run, (adverse) changes in socioemotional development have similarly negative impacts on subjective health measures and life satisfaction as well as educational success.

From a policy perspective, our study highlights a number of important results. First, it provides evidence for a causal link between uncertainty and youths' socioemotional development. We show that among early-adolescent East Germans, anger, anxiety and self-confidence changed substantially within a relatively short time span from before to after Reunification (using as a counterfactual trend the

development of a slightly older cohort between the same ages prior to Reunification). Second, these changes had a lasting impact on these adolescents, impacting their outcomes as young adults. These findings highlight the importance of studying and promoting socioemotional development at early ages. Third, focusing on gender differences, we show that similar shocks to socioemotional development affect the behavior of boys and girls very differently. This is also important from the point of view of policy, as it suggests that careful targeting is needed. While a great deal of attention has been paid to particular problems related to the externalizing behavior of boys, especially in the classroom, less attention has been given to severe problems in internalizing behavior (related to mental-health problems) in girls. However, as we highlight, externalizing behaviors and self-control problems as well as internalizing behaviors related to mental-health problems are detrimental in the short run and appear similarly relevant for longer-run health, wellbeing and (educational) success.

References

[1] Almlund, M., Duckworth, A. L., Heckman, J., and Kautz, T. 2011. "Personality Psychology and Economics", Handbook of The Economics of Education, 1-181.

[2] Autor, D., Figlio, D., Karbownik, K., Roth, J., and Wasserman, M. 2019. "Family Disadvantage and the Gender Gap in Behavioral and Educational Outcomes", American Economic Journal: Applied Economics, 11(3), 338-381.

[3] Bertrand, M., and Pan, J. 2013. "The Trouble with Boys: Social Influences and the Gender Gap in Disruptive Behavior", American Economic Journal: Applied Economics, 5(1), 32-64.

[4] Bhaumik, S. K., and Nugent, J. B. 2011. "Real options and demographic decisions: empirical evidence from East and West Germany", Applied Economics, 43(21), 2739-2749.

[5] Borghans, L., Duckworth, A. L., Heckman, J. J., Weel, B. 2008. "The Economics and Psychology of Personality Traits", Journal of Human Resources, 43(4), 972-1059.

[6] Brenøe, A. A., and Lundberg, S. 2018. "Gender gaps in the effects of childhood family environment: Do they persist into adulthood? ", European Economic Review, 109, 42-62.

[7] Bütikofer, A. and Peri, G. 2020. "How Cognitive Ability and Personality Traits Affect Geographic Mobility", forthcoming in Journal of Labor Economics.

[8] Card, D. 1999. "The Causal Effect of Education on Earnings." In Orley Ashenfelter and David Card, editors, Handbook of Labor Economics Volume 3A. Amsterdam: Elsevier.

[9] Conti, G., Heckman, J. J., Pinto, R. 2016. "The Effects of Two Influential Early Childhood Interventions on Health and Healthy Behaviour", The

Economic Journal, 126(596), F28-F65.

[10] Cunha, F., and Heckman, J. 2007. "The Technology of Skill Formation", American Economic Review, 97(2), 31-47.

[11] Cunha, F., Heckman, J. J., and Schennach, S. M. 2010. "Estimating the Technology of Cognitive and Noncognitive Skill Formation", Econometrica, 78(3), 883-931.

[12] Deming, D. J. 2017. "The Growing Importance of Social Skills in the Labor Market*", The Quarterly Journal of Economics, 132(4), 1593-1640.

[13] Fortin, N. M., Oreopoulos, P., and Phipps, S. 2015. "Leaving Boys Behind Gender Disparities in High Academic Achievement", Journal of Human Resources, 50(3), 549-579.

[14] Heckman, J. J., Stixrud, J., and Urzua, S. 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior", Journal of Labor Economics, 24(3), 411-482.

[15] Heckman, J., Pinto, R., and Savelyev, P. 2013. "Understanding the Mechanisms Through Which an Influential Early Childhood Program Boosted Adult Outcomes", American Economic Review, 103(6), 2052-2086.

[16] Hunt, J. 2002. "The Transition in East Germany: When Is a Ten-Point Fall in the Gender Wage Gap Bad News? ", Journal of Labor Economics, 20(1), 148-169.

[17] Hunt, J. 2008. "German Reunification, Economics Of", In: The New Palgrave Dictionary of Economics, 1-10, Palgrave Macmillan (UK).

[18] Jackson, C. K., Porter, S., Easton, J., Blanchard, A., and Kiguel, S. 2020. "School Effects on Socioemotional Development, School-Based Arrests, and Educational Attainment", American Economic Review: Insights, 2(4), 491-508.

[19] Juutilainen, A., Kortelainen, S., Lehto, S., Ronnemaa, T., Pyorala, K., and Laakso, M. 2004. "Gender Difference in the Impact of Type 2 Diabetes on Coronary Heart Disease Risk", Diabetes Care, 27(12), 2898-2904.

[20] Kaufmann, K.M., Messner, M. and A. Solis. 2015 "Elite Higher Education, the Marriage Market and the Intergenerational Transmission of Human Capital."

[21] Kirkcaldy, B., Trimpop, R., and Furnham, A. 1999. "German unification: persistent differences between those from East and West", Journal of Managerial Psychology, 14(2), 121-133.

[22] Kosse, F., Deckers, T., Pinger, P., Schildberg-Hörisch, H., and A. Falk. 2020. "The Formation of Prosociality: Causal Evidence on the Role of Social Environment", Journal of Political Economy, 128(2), 434–467.

[23] Kraemer, S. 2000. "The fragile male", BMJ, 321(7276), 1609-1612.

[24] Krauss, T., and Faas, A. 1994. "The Wall: On the psychology of the Reunification of Germany", Contemporary Family Therapy, 16(3), 199-213.

[25] Krueger, A. B., and Pischke, J.-S. 1995. "A Comparative Analysis of East and West German Labor Markets: Before and After Unification", In: Differences and Changes in Wage Structures, 405-446, University of Chicago Press.

[26] Kudielka, B. M., and Kirschbaum, C. 2005. "Sex differences in HPA axis responses to stress: a review", Biological Psychology, 69(1), 113-132.

[27] Schmitt, M., and Maes, J. 1998. "Perceived Injustice in Unified Germany and Mental Health", Social Justice Research, 11(1), 59-78.

[28] Slomski, A. 2012. "Chronic Mental Health Issues in Children Now Loom Larger Than Physical Problems", JAMA: The Journal of the American Medical Association, 308(3), 223-225.

Tables

Table 1: Variable Description

(a) Variables in the short-run (in adolescence)

	Description	Values
Socioemotional Development		
Anger	Combined score of 2 items.	1 4
Anxiety	Combined score of 2 items.	1 4
Self-Confidence	Problems with low self-confidence.	1 4

(b) Variables in the long-run (as young adults)

	Description	Values
Externalizing Behavior		
Physical Fighting	Indicator for having started or been in a physical fight in the past 12 months.	0 1
Destroy Property	Indicator for having destroyed someone's property in the past 12 months.	0 1
Internalizing Behavior		
Suicidal Thoughts	Indicator for having thought of committing suicide at least once.	0 1
Repeated Suicidal Thoughts	Indicator for having thought of committing suicide more than once.	0 1
Behavioral Control Problems		
Alcohol Consumption: Regular	Indicator for drinking alcohol 1-2 times per month.	0 1
Alcohol Consumption: Heavy	Indicator for drinking at least once per week.	0 1
Cigarette Smoking	Indicator for smoking regularly/ occasionally.	0 1
Health & Well-being		
Subjective Health	Subjective health measure (1 lowest, 5 highest).	1 5
Life Satisfaction	Satisfaction about life in general/ overall (1 lowest, 4 highest).	1 4
Academic Outcomes		
German Grade	German grade in school grade 10 (1 lowest, 5 highest).	1 5
Math Grade	Math grade in school grade 10 (1 lowest, 5 highest).	1 5
Abitur Degree	Indicator for having a degree permitting university studies.	0 1

Notes: For more details, see Section 3.

Table 2: Descriptive Statistics by Gender

(a) Variables in the short-run (as adolescence)

	Female	Male	Diff.
Socioemotional Development			
Anger	-0.1746	0.0486	0.22***
	[0.9129]	[0.9629]	[0.00]
Anxiety	-0.0024	-0.1701	-0.17***
	[0.9725]	[0.8897]	[0.00]
Self-Confidence	-0.0646	0.1143	0.18***
	[1.0224]	[0.9096]	[0.00]
N Individuals	462	394	

(b) Variables in the long-run (as young adults)

	Female	Male	Diff.
Externalizing Behavior			
Physical Fighting	0.0238	0.0950	0.07***
	[0.1525]	[0.2936]	[0.00]
Destroy Property	0.0324	0.1150	0.08***
	[0.1772]	[0.3194]	[0.00]
N Individuals	463	400	
Internalizing Behavior			
Suicidal Thoughts	0.3480	0.1979	-0.15***
	[0.4769]	[0.3989]	[0.00]
Repeated Suicidal Thoughts	0.0859	0.0264	-0.06***
	[0.2805]	[0.1605]	[0.00]
N Individuals	454	379	
Behavioral Control Problems			
Alcohol Consumption: Regular	0.6740	0.7546	0.08*
	[0.4693]	[0.4309]	[0.01]
Alcohol Consumption: Heavy	0.4053	0.5594	0.15***
	[0.4915]	[0.4971]	[0.00]
Cigarette Smoking	0.3855	0.3615	-0.02
	[0.4872]	[0.4811]	[0.48]
N Individuals	454	379	
Health & Well-being			
Subjective Health	-0.0262	0.1977	0.22***
	[1.0387]	[0.9156]	[0.00]
Life Satisfaction	-0.0084	0.0432	0.05
	[1.0199]	[0.9000]	[0.44]
N Individuals	459	400	
Academic Outcomes			
German Grade	0.4777	0.0295	-0.45***
	[0.9124]	[0.9247]	[0.00]
Math Grade	0.2655	0.3016	0.04
	[0.9521]	[0.9705]	[0.62]
Abitur Degree	0.4684	0.4085	-0.06
	[0.4996]	[0.4923]	[0.11]
N Individuals	395	328	

Notes: For a description of the variables, see Table 1. In Panel (a), we pool both cohorts and show the means of the socioemotional measures for youths at ages 12/13 and 13/14 (i.e. before and after Reunification for the young cohort) as in the analysis of short-run effects. In Panel (b), we display means of the longer-run outcomes when youths are between ages 18 and 21, using the same (pooled) sample as in the short-run analysis.

Table 3: The Effect of Reunification on Socioemotional Development

Panel A	**Main Results**					
	Anger		Anxiety		Self-Confidence	
	[1]	[2]	[3]	[4]	[5]	[6]
Treated x Post	0.334***	0.334***	0.362***	0.362***	-0.439***	-0.439***
	[0.071]	[0.071]	[0.068]	[0.068]	[0.077]	[0.076]
Treated	-0.061		-0.020		0.034	
	[0.066]		[0.066]		[0.067]	
Post	-0.080*	-0.080*	-0.130***	-0.130***	0.005	0.005
	[0.046]	[0.046]	[0.045]	[0.045]	[0.047]	[0.047]
Constant	-0.079*	-0.106***	-0.086**	-0.095***	0.097**	0.112***
	[0.046]	[0.018]	[0.043]	[0.017]	[0.044]	[0.019]
N Observations	1712	1712	1712	1712	1712	1712
N Individuals	856	856	856	856	856	856
Individual FE	NO	YES	NO	YES	NO	YES
R-squared	0.012	0.030	0.017	0.033	0.031	0.065
Panel B	**Placebo-Tests**					
Treated x Post	0.046	0.043	0.051	0.070	0.060	0.059
	[0.071]	[0.071]	[0.070]	[0.071]	[0.080]	[0.080]
Treated	-0.028		0.056		-0.031	
	[0.069]		[0.066]		[0.069]	
Post	-0.078*	-0.078*	-0.127***	-0.127***	0.006	0.006
	[0.046]	[0.046]	[0.044]	[0.044]	[0.049]	[0.049]
Constant	-0.002	-0.013	-0.046	-0.026	0.010	-0.004
	[0.046]	[0.018]	[0.042]	[0.018]	[0.045]	[0.020]
N Observations	1688	1688	1689	1689	1685	1685
N Individuals	856	856	856	856	856	856
Individual FE	NO	YES	NO	YES	NO	YES
R-squared	0.001	0.004	0.005	0.011	0.000	0.001

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post" represents the student's age. In Panel A, "Post" is a dummy variable that takes the value of one if the age of the individual is 13/14 (this is prereunification for the older cohort and post-Reunification for the younger cohort) and zero when aged 12/13 (i.e., prereunification for both cohorts). "Treatment x Post" indicates changes in the outcome for the younger cohort, after versus before Reunification. In Panel B, we perform a placebo test that compares the change in outcomes of both cohorts in the prereunification period to lend support to the parallel trend assumption.

Table 4: The Effect of Reunification on Socioemotional Development by Gender

Panel A	**Main Results**					
	Anger		Anxiety		Self-Confidence	
	[1]	[2]	[3]	[4]	[5]	[6]
Treated x Post	0.300***	0.300***	0.302***	0.302***	-0.226**	-0.226**
	[0.110]	[0.109]	[0.099]	[0.099]	[0.109]	[0.109]
Treated x Post x Female	0.062	0.062	0.111	0.111	-0.392**	-0.392**
	[0.144]	[0.144]	[0.137]	[0.137]	[0.152]	[0.152]
Treated	-0.176*		-0.127		0.075	
	[0.100]		[0.095]		[0.094]	
Treated x Female	0.217		0.194		-0.074	
	[0.132]		[0.131]		[0.133]	
Post	-0.107	-0.107	-0.107	-0.107	-0.047	-0.047
	[0.071]	[0.071]	[0.066]	[0.066]	[0.067]	[0.067]
Post x Female	0.052	0.052	-0.044	-0.044	0.098	0.098
	[0.093]	[0.093]	[0.090]	[0.090]	[0.095]	[0.095]
Female	-0.360***		0.077		-0.106	
	[0.091]		[0.087]		[0.088]	
Constant	0.114	-0.106***	-0.127**	-0.095***	0.154**	0.112***
	[0.069]	[0.018]	[0.062]	[0.017]	[0.066]	[0.019]
N Observations	1712	1712	1712	1712	1712	1712
N Individuals	856	856	856	856	856	856
Individual FE	NO	YES	NO	YES	NO	YES
R-squared	0.031	0.031	0.029	0.034	0.046	0.073
Panel B	**Placebo-Tests**					
Treated x Post	0.166	0.145	0.060	0.082	0.156	0.141
	[0.106]	[0.107]	[0.108]	[0.109]	[0.104]	[0.105]
Treated x Post x Female	-0.221	-0.188	-0.016	-0.023	-0.179	-0.152
	[0.143]	[0.142]	[0.142]	[0.143]	[0.157]	[0.157]
Treated	-0.236**		-0.080		-0.030	
	[0.100]		[0.090]		[0.100]	
Treated x Female	0.389***		0.248*		0.002	
	[0.137]		[0.130]		[0.138]	
Post	-0.105	-0.105	-0.104	-0.104	-0.048	-0.048
	[0.072]	[0.072]	[0.065]	[0.065]	[0.069]	[0.069]
Post x Female	0.051	0.051	-0.043	-0.043	0.101	0.101
	[0.094]	[0.093]	[0.088]	[0.088]	[0.097]	[0.097]
Female	-0.366***		0.075		-0.109	
	[0.092]		[0.084]		[0.090]	
Constant	0.194***	-0.013	-0.086	-0.026	0.068	-0.004
	[0.070]	[0.018]	[0.060]	[0.018]	[0.067]	[0.020]
N Observations	1688	1688	1689	1689	1685	1685
N Individuals	856	856	856	856	856	856
Individual FE	NO	YES	NO	YES	NO	YES
R-squared	0.021	0.006	0.017	0.011	0.004	0.003

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post" represents the student's age. In Panel A, "Post" is a dummy variable that takes the value of one if the age of the individual is 13/14 (this is prereunification for the older cohort and post-Reunification for the younger cohort) and zero when aged 12/13 (i.e., prereunification for both cohorts). "Treatment x Post" indicates changes in the outcome for the younger cohort, after versus before Reunification. In Panel B, we perform a placebo test that compares the change in outcomes of both cohorts in the prereunification period to lend support to the parallel trend assumption.

Table 5: Longer-Run Outcomes: Behavior

Explanatory Variable:	**Change in SED**					
	Anger		Anxiety		Self-Confidence	
	main coef.	female int.	main coef.	female int.	main coef.	female int.
Outcomes:						
Externalizing Behavior						
Fighting	0.041***		0.000		-0.003	
	[0.012]		[0.010]		[0.010]	
	0.068***	-0.053**	-0.002	0.006	0.012	-0.025
	[0.021]	[0.025]	[0.019]	[0.022]	[0.020]	[0.022]
Destroy Property	0.041***		-0.001		-0.007	
	[0.013]		[0.010]		[0.009]	
	0.071***	-0.056**	0.028	-0.047**	-0.008	-0.003
	[0.023]	[0.026]	[0.021]	[0.023]	[0.020]	[0.021]
Internalizing Behavior						
Suicidal thoughts	0.070***		0.040**		-0.050**	
	[0.019]		[0.020]		[0.019]	
	0.040	0.053	-0.006	0.071*	0.022	-0.110***
	[0.026]	[0.039]	[0.027]	[0.039]	[0.026]	[0.037]
Repeated Suicid. thoughts	0.021*		0.021*		-0.017	
	[0.011]		[0.012]		[0.012]	
	0.012	0.016	-0.017	0.063***	0.014	-0.046**
	[0.010]	[0.022]	[0.010]	[0.021]	[0.010]	[0.020]
Behavioral Control						
Alcohol regular	0.016		0.005		-0.005	
	[0.021]		[0.021]		[0.020]	
	0.054*	-0.073*	0.012	-0.013	0.000	-0.007
	[0.029]	[0.042]	[0.029]	[0.041]	[0.030]	[0.040]
Alcohol heavy	0.037*		0.026		0.020	
	[0.022]		[0.022]		[0.022]	
	0.066**	-0.055	0.056*	-0.053	0.040	-0.031
	[0.032]	[0.045]	[0.033]	[0.044]	[0.035]	[0.045]
Cigarette Smoking	0.058***		0.015		0.017	
	[0.022]		[0.022]		[0.021]	
	0.085***	-0.052	-0.011	0.042	0.061*	-0.067
	[0.032]	[0.045]	[0.034]	[0.045]	[0.033]	[0.043]

Notes: Standard errors are in brackets. The "main coefficient" is the coefficient on the change in the particular socioemotional skill (i.e. anger, anxiety, or self-confidence, as indicated by the column) between age 12/13 to 13/14, i.e. prior versus post Reunification for the young cohort. The "female interaction" is the coefficient on the previously described variable (change in SED) interacted with a dummy for "female". All regressions include as controls the level of the relevant socioemotional skill at age 12/13 (i.e. prior to Reunification for the young cohort), a "treatment" dummy, which is a dummy for being part of the young cohort, and a "female" dummy. Columns (2), (4), and (6) include further interactions between the "Pre-"level of the socioemotional skill and "female" and between "treatment" and "female". The full set of coefficients, including all included controls for the relevant outcomes in this Table, are displayed in Online Appendix Tables A2 to A8.

Table 6: Longer-Run Outcomes: Health and Academics

Explanatory Variable:	**Change in SED**					
	Anger		Anxiety		Self-Confidence	
	main coef.	female int.	main coef.	female int.	main coef.	female int.
Outcomes:						
Health & Wellbeing						
Subjective Health	-0.115**		-0.084*		0.085*	
	[0.045]		[0.044]		[0.045]	
	-0.138**	0.057	0.014	-0.162*	0.082	-0.013
	[0.064]	[0.089]	[0.061]	[0.088]	[0.068]	[0.092]
Life Satisfaction	-0.103**		-0.118***		0.083*	
	[0.044]		[0.043]		[0.043]	
	-0.100*	-0.001	-0.093	-0.043	-0.014	0.158*
	[0.059]	[0.088]	[0.067]	[0.088]	[0.062]	[0.086]
Academic Outcomes						
German Grade	-0.086*		-0.101**		0.053	
	[0.046]		[0.044]		[0.041]	
	-0.111*	0.058	-0.047	-0.084	-0.079	0.205**
	[0.065]	[0.092]	[0.069]	[0.090]	[0.064]	[0.083]
Math Grade	-0.072		-0.066		0.023	
	[0.048]		[0.044]		[0.043]	
	-0.128**	0.110	-0.084	0.028	0.034	-0.017
	[0.065]	[0.097]	[0.073]	[0.092]	[0.071]	[0.090]
Abitur Degree	-0.044*		-0.050**		0.003	
	[0.023]		[0.022]		[0.022]	
	-0.046	0.001	-0.049	-0.004	-0.031	0.058
	[0.032]	[0.047]	[0.036]	[0.045]	[0.034]	[0.044]

Notes: Standard errors are in brackets. The "main coefficient" is the coefficient on the change in the particular socioemotional skill (i.e. anger, anxiety, or self-confidence, as indicated by the column) between age 12/13 to 13/14, i.e. prior versus post Reunification for the young cohort. The "female interaction" is the coefficient on the previously described variable (change in SED) interacted with a dummy for "female". All regressions include as controls the level of the relevant socioemotional skill at age 12/13 (i.e. prior to Reunification for the young cohort), a "treatment" dummy, which is a dummy for being part of the young cohort, and a "female" dummy. Columns (2), (4), and (6) include further interactions between the "Pre-"level of the socioemotional skill and "female" and between "treatment" and "female". The full set of coefficients, including all included controls for the relevant outcomes in this Table, are displayed in Online Appendix Tables A9 to A13.

ONLINE APPENDIX – For Online Publication

A. Tables

Table A.1: Comparison of Measures

	Longitudinal Study of Students			**Youth Risk Behavior Surveillance**		
survey country	Germany			USA		
sample age	18-21 year olds			18 year olds (12th grade)		
survey year	1995			1995		
	definition	girls	boys	definition	girls	boys
physical fight	have been or started a physical fight at least once in past 12 months	2.38%	9.32%	at least once in past 30 in physical fight on school property	5.6%	15.5%
suicidal thoughts	thought about committing suicide at least once	34.88%	19.95%	thought seriously about attempting suicide during past 12 months	23.9%	16.3%
smoking behavior	currently smoking (regularly/ occasionally)	38.55%	36.15%	smoked at least on one of the past 30 days	34.4%	42.0%
drinking behavior	drank alcohol at least 1-2 times per month during past year[1]	63.04%	74.35%	drank alcohol on at least one day out of the past 30 days	53.6%	59.5%
	drank alcohol at least once per week during the past 3 months[2]	37.77%	57.72%	episodic heavy drinking (drank at least 5 drinks in one occasion during the past 30 days)	31.6%	46.5%

1 Corresponds to the variable *Alcohol Consumption: Regular* used in the analysis.

2 Corresponds to the variable *Alcohol Consumption: Heavy* used in the analysis.

Table A.2: Longer-Run Outcome: Physical Fighting

	Physical Fighting					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**0.041*** [0.012]**	**0.068*** [0.021]**				
Δ Anger x Female		**-0.053** [0.025]**				
Δ Anxiety (Post-Pre)			**0.000 [0.010]**	**-0.002 [0.019]**		
Δ Anxiety x Female				**0.006 [0.022]**		
Δ Self-Confidence (Post-Pre)					**-0.003 [0.010]**	**0.012 [0.020]**
Δ Self-Confidence x Female						**-0.025 [0.022]**
Anger (Pre)	0.046*** [0.011]	0.088*** [0.020]				
Anger (Pre) x Female		-0.082*** [0.021]				
Anxiety (Pre)			0.017 [0.013]	0.026 [0.025]		
Anxiety (Pre) x Female				-0.015 [0.028]		
Self-Confidence (Pre)					-0.002 [0.010]	0.013 [0.018]
Self-Confidence (Pre) x Female						-0.026 [0.021]
Treated	0.022 [0.016]	0.034 [0.029]	0.032* [0.017]	0.041 [0.031]	0.031* [0.016]	0.039 [0.031]
Treated x Female		-0.012 [0.033]		-0.016 [0.034]		-0.019 [0.033]
Female	-0.063*** [0.015]	-0.060*** [0.019]	-0.075*** [0.016]	-0.069*** [0.020]	-0.072*** [0.016]	-0.064*** [0.019]
Constant	0.083*** [0.015]	0.075*** [0.017]	0.084*** [0.016]	0.082*** [0.019]	0.082*** [0.015]	0.077*** [0.017]
N Observations	863	863	863	863	863	863
N Individuals	863	863	863	863	863	863
R-squared	0.054	0.073	0.032	0.034	0.028	0.031

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.3: Longer-Run Outcome: Destroy Property

	Destroy Property					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**0.041*** [0.013]**	**0.071*** [0.023]**				
Δ Anger x Female		**-0.056** [0.026]**				
Δ Anxiety (Post-Pre)			**-0.001 [0.010]**	**0.028 [0.021]**		
Δ Anxiety x Female				**-0.047** [0.023]**		
Δ Self-Confidence (Post-Pre)					**-0.007 [0.009]**	**-0.008 [0.020]**
Δ Self-Confidence x Female						**-0.003 [0.021]**
Anger (Pre)	0.041*** [0.012]	0.063*** [0.019]				
Anger (Pre) x Female		-0.037 [0.023]				
Anxiety (Pre)			-0.003 [0.011]	0.028 [0.022]		
Anxiety (Pre) x Female				-0.050** [0.024]		
Self-Confidence (Pre)					-0.009 [0.010]	-0.023 [0.021]
Self-Confidence (Pre) x Female						0.023 [0.023]
Treated	0.063*** [0.018]	0.106*** [0.032]	0.073*** [0.019]	0.110*** [0.034]	0.071*** [0.018]	0.114*** [0.034]
Treated x Female		-0.074** [0.037]		-0.064 [0.039]		-0.083** [0.038]
Female	-0.076*** [0.018]	-0.044** [0.019]	-0.083*** [0.018]	-0.058*** [0.019]	-0.086*** [0.018]	-0.050*** [0.018]
Constant	0.085*** [0.015]	0.066*** [0.016]	0.083*** [0.016]	0.071*** [0.017]	0.085*** [0.015]	0.068*** [0.017]
N Observations	863	863	863	863	863	863
N Individuals	863	863	863	863	863	863
R-squared	0.064	0.078	0.046	0.058	0.047	0.055

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.4: Longer-Run Outcome: Suicidal Thoughts

	Suicidal Thoughts					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**0.070*** **	**0.040**				
	[0.019]	**[0.026]**				
Δ Anger x Female		**0.053**				
		[0.039]				
Δ Anxiety (Post-Pre)			**0.040** **	**-0.006**		
			[0.020]	**[0.027]**		
Δ Anxiety x Female				**0.071***		
				[0.039]		
Δ Self-Confidence (Post-Pre)					**-0.050** **	**0.022**
					[0.019]	**[0.026]**
Δ Self-Confidence x Female						**-0.110*** **
						[0.037]
Anger (Pre)	0.083***	0.063**				
	[0.020]	[0.027]				
Anger (Pre) x Female		0.031				
		[0.040]				
Anxiety (Pre)			0.052**	0.009		
			[0.021]	[0.031]		
Anxiety (Pre) x Female				0.065		
				[0.042]		
Self-Confidence (Pre)					-0.084***	-0.021
					[0.019]	[0.026]
Self-Confidence (Pre) x Female						-0.096***
						[0.037]
Treated	0.053*	-0.019	0.058*	-0.015	0.053*	-0.013
	[0.031]	[0.041]	[0.032]	[0.042]	[0.031]	[0.041]
Treated x Female		0.128**		0.128**		0.106*
		[0.061]		[0.063]		[0.062]
Female	0.164***	0.108***	0.141***	0.087**	0.133***	0.086**
	[0.030]	[0.041]	[0.030]	[0.041]	[0.030]	[0.040]
Constant	0.170***	0.202***	0.179***	0.206***	0.182***	0.206***
	[0.025]	[0.028]	[0.025]	[0.028]	[0.025]	[0.028]
N Observations	833	833	833	833	833	833
N Individuals	833	833	833	833	833	833
R-squared	0.055	0.063	0.042	0.052	0.056	0.072

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.5: Longer-Run Outcome: Repeated Suicidal Thoughts

	Repeated Suicidal Thoughts					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**0.021***	**0.012**				
	[0.011]	**[0.010]**				
Δ Anger x Female		**0.016**				
		[0.022]				
Δ Anxiety (Post-Pre)			**0.021***	**-0.017**		
			[0.012]	**[0.010]**		
Δ Anxiety x Female				**0.063*****		
				[0.021]		
Δ Self-Confidence (Post-Pre)					**-0.017**	**0.014**
					[0.012]	**[0.010]**
Δ Self-Confidence x Female						**-0.046****
						[0.020]
Anger (Pre)	0.031***	0.016				
	[0.012]	[0.011]				
Anger (Pre) x Female		0.025				
		[0.023]				
Anxiety (Pre)			0.010	-0.012		
			[0.011]	[0.010]		
Anxiety (Pre) x Female				0.032		
				[0.020]		
Self-Confidence (Pre)					-0.022*	0.010
					[0.012]	[0.008]
Self-Confidence (Pre) x Female						-0.050**
						[0.021]
Treated	0.035**	-0.005	0.033**	-0.001	0.034**	-0.002
	[0.017]	[0.016]	[0.017]	[0.017]	[0.016]	[0.017]
Treated x Female		0.070**		0.058*		0.060*
		[0.032]		[0.032]		[0.032]
Female	0.065***	0.034*	0.057***	0.032*	0.055***	0.029
	[0.016]	[0.019]	[0.015]	[0.018]	[0.015]	[0.018]
Constant	0.009	0.027**	0.012	0.026**	0.013	0.027**
	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]
N Observations	833	833	833	833	833	833
N Individuals	833	833	833	833	833	833
R-squared	0.033	0.040	0.028	0.044	0.029	0.043

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.6: Longer-Run Outcome: Alcohol Consumption: Regular

	Alcohol Consumption: Regular					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**0.016**	**0.054***				
	[0.021]	**[0.029]**				
Δ Anger x Female		**-0.073***				
		[0.042]				
Δ Anxiety (Post-Pre)			**0.005**	**0.012**		
			[0.021]	**[0.029]**		
Δ Anxiety x Female				**-0.013**		
				[0.041]		
Δ Self-Confidence (Post-Pre)					**-0.005**	**0.000**
					[0.020]	**[0.030]**
Δ Self-Confidence x Female						**-0.007**
						[0.040]
Anger (Pre)	0.015	0.022				
	[0.020]	[0.028]				
Anger (Pre) x Female		-0.012				
		[0.041]				
Anxiety (Pre)			-0.005	-0.012		
			[0.021]	[0.031]		
Anxiety (Pre) x Female				0.013		
				[0.042]		
Self-Confidence (Pre)					-0.024	-0.007
					[0.019]	[0.030]
Self-Confidence (Pre) x Female						-0.028
						[0.039]
Treated	0.006	-0.007	0.008	0.001	0.009	0.006
	[0.032]	[0.045]	[0.032]	[0.045]	[0.032]	[0.045]
Treated x Female		0.026		0.013		0.004
		[0.065]		[0.065]		[0.065]
Female	-0.078**	-0.090**	-0.080**	-0.084**	-0.085***	-0.086**
	[0.032]	[0.043]	[0.031]	[0.042]	[0.032]	[0.042]
Constant	0.751***	0.758***	0.750***	0.752***	0.753***	0.753***
	[0.026]	[0.030]	[0.027]	[0.030]	[0.026]	[0.030]
N Observations	833	833	833	833	833	833
N Individuals	833	833	833	833	833	833
R-squared	0.009	0.013	0.008	0.009	0.010	0.011

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.7: Longer-Run Outcome: Alcohol Consumption: Heavy

	Alcohol Consumption: Heavy					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**0.037***	**0.066****				
	[0.022]	**[0.032]**				
Δ Anger x Female		**-0.055**				
		[0.045]				
Δ Anxiety (Post-Pre)			**0.026**	**0.056***		
			[0.022]	**[0.033]**		
Δ Anxiety x Female				**-0.053**		
				[0.044]		
Δ Self-Confidence (Post-Pre)					**0.020**	**0.040**
					[0.022]	**[0.035]**
Δ Self-Confidence x Female						**-0.031**
						[0.045]
Anger (Pre)	0.046**	0.060*				
	[0.023]	[0.033]				
Anger (Pre) x Female		-0.027				
		[0.045]				
Anxiety (Pre)			-0.005	-0.002		
			[0.023]	[0.035]		
Anxiety (Pre) x Female				-0.003		
				[0.046]		
Self-Confidence (Pre)					0.003	0.014
					[0.022]	[0.034]
Self-Confidence (Pre) x Female						-0.016
						[0.044]
Treated	-0.130***	-0.141***	-0.130***	-0.147***	-0.114***	-0.126**
	[0.035]	[0.052]	[0.035]	[0.051]	[0.035]	[0.052]
Treated x Female		0.024		0.033		0.018
		[0.070]		[0.070]		[0.071]
Female	-0.144***	-0.155***	-0.152***	-0.164***	-0.151***	-0.160***
	[0.035]	[0.047]	[0.034]	[0.046]	[0.034]	[0.046]
Constant	0.614***	0.618***	0.614***	0.620***	0.609***	0.614***
	[0.029]	[0.034]	[0.029]	[0.034]	[0.029]	[0.034]
N Observations	833	833	833	833	833	833
N Individuals	833	833	833	833	833	833
R-squared	0.043	0.045	0.041	0.043	0.040	0.040

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.8: Longer-Run Outcome: Cigarette Smoking

	Cigarette Smoking					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**0.058*** **	**0.085*** **				
	[0.022]	**[0.032]**				
Δ Anger x Female		**-0.052**				
		[0.045]				
Δ Anxiety (Post-Pre)			**0.015**	**-0.011**		
			[0.022]	**[0.034]**		
Δ Anxiety x Female				**0.042**		
				[0.045]		
Δ Self-Confidence (Post-Pre)					**0.017**	**0.061***
					[0.021]	**[0.033]**
Δ Self-Confidence x Female						**-0.067**
						[0.043]
Anger (Pre)	0.098***	0.117***				
	[0.022]	[0.032]				
Anger (Pre) x Female		-0.038				
		[0.045]				
Anxiety (Pre)			0.030	0.026		
			[0.023]	[0.035]		
Anxiety (Pre) x Female				0.002		
				[0.046]		
Self-Confidence (Pre)					0.001	0.025
					[0.021]	[0.034]
Self-Confidence (Pre) x Female						-0.033
						[0.043]
Treated	0.016	-0.023	0.024	-0.012	0.035	-0.008
	[0.034]	[0.049]	[0.035]	[0.051]	[0.035]	[0.050]
Treated x Female		0.076		0.064		0.071
		[0.068]		[0.069]		[0.070]
Female	0.043	0.008	0.019	-0.011	0.024	-0.008
	[0.034]	[0.045]	[0.034]	[0.046]	[0.034]	[0.046]
Constant	0.348***	0.364***	0.355***	0.371***	0.347***	0.364***
	[0.029]	[0.033]	[0.029]	[0.034]	[0.029]	[0.034]
N Observations	833	833	833	833	833	833
N Individuals	833	833	833	833	833	833
R-squared	0.025	0.027	0.004	0.007	0.003	0.008

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.9: Longer-Run Outcome: Subjective Health

	Subjective Health					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**-0.115****	**-0.138****				
	[0.045]	**[0.064]**				
Δ Anger x Female		**0.057**				
		[0.089]				
Δ Anxiety (Post-Pre)			**-0.084***	**0.014**		
			[0.044]	**[0.061]**		
Δ Anxiety x Female				**-0.162***		
				[0.088]		
Δ Self-Confidence (Post-Pre)					**0.085***	**0.082**
					[0.045]	**[0.068]**
Δ Self-Confidence x Female						**-0.013**
						[0.092]
Anger (Pre)	-0.180***	-0.175**				
	[0.045]	[0.068]				
Anger (Pre) x Female		0.003				
		[0.090]				
Anxiety (Pre)			-0.189***	-0.142**		
			[0.044]	[0.062]		
Anxiety (Pre) x Female				-0.066		
				[0.087]		
Self-Confidence (Pre)					0.160***	0.130*
					[0.042]	[0.067]
Self-Confidence (Pre) x Female						0.042
						[0.086]
Treated	-0.157**	-0.022	-0.157**	-0.048	-0.154**	-0.022
	[0.068]	[0.091]	[0.068]	[0.091]	[0.069]	[0.092]
Treated x Female		-0.258*		-0.196		-0.254*
		[0.134]		[0.135]		[0.138]
Female	-0.258***	-0.144	-0.190***	-0.102	-0.191***	-0.083
	[0.067]	[0.091]	[0.066]	[0.091]	[0.067]	[0.091]
Constant	0.278***	0.219***	0.240***	0.195***	0.251***	0.196***
	[0.055]	[0.062]	[0.057]	[0.065]	[0.057]	[0.065]
N Observations	859	859	859	859	859	859
N Individuals	859	859	859	859	859	859
R-squared	0.040	0.045	0.042	0.049	0.038	0.043

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.10: Longer-Run Outcome: Life Satisfaction

	Life Satisfaction					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**-0.103****	**-0.100***				
	[0.044]	**[0.059]**				
Δ Anger x Female		**-0.001**				
		[0.088]				
Δ Anxiety (Post-Pre)			**-0.118*****	**-0.093**		
			[0.043]	**[0.067]**		
Δ Anxiety x Female				**-0.043**		
				[0.088]		
Δ Self-Confidence (Post-Pre)					**0.083***	**-0.014**
					[0.043]	**[0.062]**
Δ Self-Confidence x Female						**0.158***
						[0.086]
Anger (Pre)	-0.137***	-0.097				
	[0.042]	[0.060]				
Anger (Pre) x Female		-0.072				
		[0.083]				
Anxiety (Pre)			-0.114**	-0.134**		
			[0.047]	[0.067]		
Anxiety (Pre) x Female				0.041		
				[0.093]		
Self-Confidence (Pre)					0.118**	0.084
					[0.046]	[0.061]
Self-Confidence (Pre) x Female						0.048
						[0.091]
Treated	-0.052	0.012	-0.039	0.011	-0.048	-0.007
	[0.066]	[0.090]	[0.068]	[0.092]	[0.066]	[0.088]
Treated x Female		-0.114		-0.097		-0.057
		[0.132]		[0.136]		[0.133]
Female	-0.078	-0.029	-0.032	0.016	-0.027	0.001
	[0.066]	[0.088]	[0.066]	[0.089]	[0.066]	[0.086]
Constant	0.075	0.044	0.049	0.023	0.054	0.038
	[0.054]	[0.060]	[0.055]	[0.061]	[0.054]	[0.060]
N Observations	859	859	859	859	859	859
N Individuals	859	859	859	859	859	859
R-squared	0.014	0.016	0.013	0.015	0.012	0.017

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.

Table A.11: Longer-Run Outcome: German Grade (in grade 10)

	German Grade (in grade 10)					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**-0.086***	**-0.111***				
	[0.046]	**[0.065]**				
Δ Anger x Female		**0.058**				
		[0.092]				
Δ Anxiety (Post-Pre)			**-0.101****	**-0.047**		
			[0.044]	**[0.069]**		
Δ Anxiety x Female				**-0.084**		
				[0.090]		
Δ Self-Confidence (Post-Pre)					**0.053**	**-0.079**
					[0.041]	**[0.064]**
Δ Self-Confidence x Female						**0.205****
						[0.083]
Anger (Pre)	-0.070	-0.091				
	[0.045]	[0.066]				
Anger (Pre) x Female		0.043				
		[0.090]				
Anxiety (Pre)			-0.222***	-0.172**		
			[0.046]	[0.077]		
Anxiety (Pre) x Female				-0.075		
				[0.096]		
Self-Confidence (Pre)					0.062	-0.037
					[0.043]	[0.071]
Self-Confidence (Pre) x Female						0.140
						[0.089]
Treated	-0.302***	-0.230**	-0.285***	-0.238**	-0.303***	-0.252**
	[0.068]	[0.100]	[0.067]	[0.100]	[0.068]	[0.100]
Treated x Female		-0.140		-0.084		-0.063
		[0.138]		[0.135]		[0.136]
Female	0.446***	0.510***	0.499***	0.532***	0.467***	0.492***
	[0.068]	[0.097]	[0.067]	[0.096]	[0.068]	[0.095]
Constant	0.161***	0.130*	0.118*	0.105	0.154**	0.144**
	[0.062]	[0.073]	[0.063]	[0.075]	[0.062]	[0.072]
N Observations	723	723	723	723	723	723
N Individuals	723	723	723	723	723	723
R-squared	0.090	0.091	0.116	0.118	0.088	0.096

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The academic outcomes measured at the end of grade 10 (aged 15/16 years old).

Table A.12: Longer-Run Outcome: Math Grade (in grade 10)

	Math Grade (in grade 10)					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**-0.072**	**-0.128****				
	[0.048]	**[0.065]**				
Δ Anger x Female		**0.110**				
		[0.097]				
Δ Anxiety (Post-Pre)			**-0.066**	**-0.084**		
			[0.044]	**[0.073]**		
Δ Anxiety x Female				**0.028**		
				[0.092]		
Δ Self-Confidence (Post-Pre)					**0.023**	**0.034**
					[0.043]	**[0.071]**
Δ Self-Confidence x Female						**-0.017**
						[0.090]
Anger (Pre)	-0.099**	-0.166**				
	[0.046]	[0.070]				
Anger (Pre) x Female		0.122				
		[0.094]				
Anxiety (Pre)			-0.203***	-0.224***		
			[0.043]	[0.072]		
Anxiety (Pre) x Female				0.035		
				[0.090]		
Self-Confidence (Pre)					0.051	0.075
					[0.045]	[0.076]
Self-Confidence (Pre) x Female						-0.039
						[0.095]
Treated	-0.377***	-0.356***	-0.367***	-0.350***	-0.383***	-0.361***
	[0.070]	[0.105]	[0.070]	[0.106]	[0.071]	[0.107]
Treated x Female		-0.055		-0.032		-0.044
		[0.142]		[0.141]		[0.143]
Female	-0.041	-0.012	0.011	0.028	-0.021	0.000
	[0.071]	[0.099]	[0.070]	[0.098]	[0.071]	[0.098]
Constant	0.468***	0.459***	0.428***	0.418***	0.462***	0.450***
	[0.061]	[0.070]	[0.061]	[0.072]	[0.062]	[0.071]
N Observations	723	723	723	723	723	723
N Individuals	723	723	723	723	723	723
R-squared	0.048	0.050	0.068	0.069	0.043	0.044

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The academic outcomes measured at the end of grade 10 (aged 15/16 years old).

Table A.13: Longer-Run Outcome: Abitur Degree

	Abitur Degree					
	[1]	[2]	[3]	[4]	[5]	[6]
Δ Anger (Post-Pre)	**-0.044***	**-0.046**				
	[0.023]	**[0.032]**				
Δ Anger x Female		**0.001**				
		[0.047]				
Δ Anxiety (Post-Pre)			**-0.050****	**-0.049**		
			[0.022]	**[0.036]**		
Δ Anxiety x Female				**-0.004**		
				[0.045]		
Δ Self-Confidence (Post-Pre)					**0.003**	**-0.031**
					[0.022]	**[0.034]**
Δ Self-Confidence x Female						**0.058**
						[0.044]
Anger (Pre)	-0.027	-0.038				
	[0.023]	[0.035]				
Anger (Pre) x Female		0.018				
		[0.047]				
Anxiety (Pre)			-0.122***	-0.133***		
			[0.022]	[0.034]		
Anxiety (Pre) x Female				0.018		
				[0.045]		
Self-Confidence (Pre)					0.031	0.016
					[0.022]	[0.035]
Self-Confidence (Pre) x Female						0.022
						[0.044]
Treated	0.372***	0.359***	0.379***	0.362***	0.361***	0.349***
	[0.035]	[0.052]	[0.035]	[0.052]	[0.036]	[0.052]
Treated x Female		0.023		0.031		0.032
		[0.071]		[0.070]		[0.072]
Female	0.052	0.042	0.080**	0.068	0.059*	0.046
	[0.035]	[0.045]	[0.034]	[0.045]	[0.035]	[0.045]
Constant	0.246***	0.252***	0.224***	0.229***	0.247***	0.254***
	[0.029]	[0.032]	[0.029]	[0.033]	[0.029]	[0.033]
N Observations	723	723	723	723	723	723
N Individuals	723	723	723	723	723	723
R-squared	0.138	0.138	0.168	0.169	0.137	0.139

Notes: Standard errors are in brackets. "Treatment" takes value one (zero) if in the younger (older) cohort. "Post-Pre" measures changes in Anger (or Anxiety, Self-Confidence, respectively) between ages 12/13 and 13/14 (i.e., before versus after Reunification for the treated (younger) cohort). The outcome variable is measured in 1995 for both cohorts.