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ABSTRACT

Socioemotional Development during Adolescence: Evidence from a Large Macro Shock*

We exploit a large quasi-exogenous shock to study the development of socioemotional skills during adolescence and the consequences for long-term behavior and labor market outlook. Using novel, longitudinal, microdata on cohorts of East German adolescents before and after a large macro shock (the German Reunification), we causally estimate the impact on socioemotional skills, finding substantial negative effects in the short run. These effects are substantially larger among those affected by the shock in their early adolescence (13-14 years old), relative to older adolescents (16-17 years old). Changes in socioemotional skills have a lasting (negative) impact on them as adults, especially among those affected early in their adolescence, in terms of their expressions of externalizing behavior (e.g., physical fighting) and behavioral control problems (i.e., substance abuse), as well as internalizing behavior (i.e., mental health) and in their (labor-market) optimism and expectations. This study highlights the permanent effects of uncertainty on socioemotional skills during formative years.

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1   Introduction

Economists and scientists more generally have displayed an increasing interest in socioe-motional skills, also known as noncognitive skills. Socioemotional skills have been shown to have critical implications for long-term economic and social success (for example, for school decisions and wages (Heckman et al., 2006; Heckman et al., 2013), educational attainment (Deming, 2017), geographic mobility (Bütikofer and Peri, 2021), and labor market adaption (Izadi and Tuhkuri, 2022)). The process of formation and development of socioemotional skills is, however, less well understood (Cunha and Heckman, 2007; Cunha et al., 2010). Understanding the development of socioemotional skills, and their responsiveness to environmental changes, as well as the malleability of socioemotional skills at different developmental stages (or ages), is paramount.

While cognitive skills are argued to be formed mainly in (early) childhood, ado-lescence has been identified as a critical period for the formation and development of socioemotional skills based on evidence from neuroscience (Burnett et al., 2011), as well as economics (Cunha et al., 2010). During adolescence, individuals face numerous changes, including hormonal shifts due to puberty (Rapee et al., 2019). It is a critical developmental stage in which experiences of negative emotions are heightened and the sensitivity toward social signals in the environment is enhanced (Rapee et al., 2019; Blakemore and Mills, 2014). Shedding light on the formation and development of so-cioemotional skills is often complicated, however, for two important reasons. First, due to the endogeneity of the environment in which development is taking place. Second, due to demanding data requirements, since longitudinal data on socioemotional skills over a longer period of time are often not readily available.

In this paper, we use novel longitudinal microdata to causally identify the impact of a significant (negative) shock, exogenous to individuals' characteristics and skills, on the development of socioemotional skills during early and late adolescence. Specifically, we examine the impact of the German Reunification in October 1990 on two cohorts of East German individuals over a ten-year period, focusing on changes in Impulse Control and Self-Confidence, which are direct measures of socioemotional development. We further explore heterogeneity in response to the shock, based on age, highlighting which stages in adolescence are particularly critical for the development of socioemotional skills. Finally, we analyze the consequences of changes in socioemotional skills on behavior and outcomes in early adulthood. Our findings offer valuable insights into the impact of major macro events on the development of socioemotional skills, and the potential long-term consequences of these changes.

Our study of socioemotional skills aligns with the widely used "Big Five" taxonomy of personality traits (McCrae and Costa, 1987), which encompasses factors such as adaptability, grit, problem solving, and teamwork (Waddell 2006; Duckworth et al. 2007; Almlund et al., 2011; Farrington et al. 2012; Kautz et al., 2014). Recent studies have looked at how changes in policy or shocks to the household can impact socioemotional development (for instance, education policies (Alan et al., 2019; Jackson et al., 2020), social intervention (Kosse et al., 2020; Sevim et al., 2023), shock to household income or health shock (Brenøe and Lundberg, 2018; Autor et al., 2019; García-Miralles and Gensowski, 2023). Notably, our analysis uses measures predating the validation of these constructs, providing a unique real-world "historic" perspective on changes in socioemotional skills and their long-term economic consequences. Our context also allows for another important historic insight by looking behind the "Iron Curtain" and employing unique microdata following East German individual before and after Reunification, from childhood into early adulthood.

Reunification represented a historic shift from a socialist to a capitalistic and democratic system, leading to rapid and substantial economic, cultural, and political changes, which initially created a highly uncertain environment for East Germans (see Hunt, 2002, and Krueger and Pischke, 1995, for a detailed overview). Previous descriptive research in psychology suggests that the period around Reunification led to significantly higher stress and anxiety levels among East German adults, with implications for their mental wellbeing, including an increase in suicides (see, for instance, Kirkcaldy et al., 1999; Krauss and Faas, 1994; and Schmitt and Maes, 1998). Our focus is on the impact of Reunification on the socioemotional development of East Germans during adolescence, a critical time for socioemotional development, and the short- and long-term behavioral outcomes. Additionally, we investigate whether the determinants of socioemotional development differ by gender, and whether changes in socioemotional skills manifest differently for males and females in terms of behavior and longer-term outcomes.

Our study takes advantage of the quasi-experimental setting of the German Reunification in October 1990 and our empirical research design to overcome significant empirical challenges. Typically, the environment in which shocks occur is endogenous to the individual (or family), making it difficult to account for unobservable factors leading to selection bias and reverse causality concerns. However, the macro nature of the shock and the panel dimension of our data allow us to control for within-individual fixed effects.

The empirical strategy contains two key aspects. First, we identify the causal effect of a shock to adolescents' environment on their socioemotional skills by partialling out

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the natural age evolution of socioemotional skills in the absence of a shock. Second, we shed light on how the effect differs between the two cohorts who are affected by the shock at different ages (in early versus late adolescence). We employ a difference-in-differences framework that uses variation in the timing of Reunification for two cohorts of surveyed students who have a three-year age gap. We partial out the natural age evolution of socioemotional skills under "no-Reunification". We focus specifically on the change in socioemotional skills of the younger "treated" cohort in the short period before and after Reunification, when the cohort was aged 12 to 14, using the evolution of the older "control" cohort's socioemotional skill development between the same *ages* (before Reunification) as the counterfactual trend. This approach allows us to control for the counterfactual trend in a precise way, ensuring that the control group is not affected by Reunification and thus not contaminated by the treatment. We extend the analysis to show how the effect of a shock differs depending on the age at which the shock takes place. To understand the malleability of socioemotional skills during different periods of adolescence, we employ a difference-in-differences approach by *year*, comparing the development of the younger and older cohort during the same pre- and post-Reunification years. This approach enables us to compare the impact of a macro shock to socioemotional development in late adolescence (ages 16 to 17) with that in early adolescence (ages 13 to 14), for which we will have identified the causal effect.

To understand whether changes in socioemotional skills in adolescence, resulting from Reunification, have a lasting (negative) impact as young adults (18 to 21-years-old), we investigate the relationship between socioemotional skill development and adolescent behavioral issues, including externalizing behaviors (such as, anger management), problems with behavioral control (such as, substance abuse), internalizing behaviors (such as, mental health concerns), and their (labor-market) optimism and expectations. Specifically, we examine the extent to which the change in socioemotional skills of the young cohort, resulting from Reunification, is associated with longer-term outcomes, relative to the change in socioemotional skills of the older cohort. By controlling for the general link between changes in socioemotional skills and long-term behaviors, we isolate the impact of the Reunification-induced change in socioemotional skills of the young cohort (in early adolescence) on long-term outcomes. The link between socioemotional skills and later behavior is crucial to understand given the growing concerns surrounding the worsening mental health among adolescents and young adults, which is often expressed through behavioral control problems and internalizing behaviors. These concerns reflect alarming trends such as the persistent opioid crisis in the United States and the fact that

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suicide is now the second leading cause of death among teenagers aged 15 to 19.[1] More-over, mental health problems have replaced physical conditions as the leading causes of disabilities among U.S. children for the first time in over thirty years (Slomski, 2012).[2]

Our study yields several notable findings. Firstly, we observe a significant decrease in socioemotional skills (impulse control and self-confidence) among young adolescents (between ages 12 and 14) as a result of Reunification, indicating the impact of increased economic and social uncertainty on socioemotional development. The decline in impulse control was substantial, with a decrease of 34 percent of a standard deviation, as was the decrease in self-confidence (by 45 percent of a standard deviation). We conduct placebo tests to ensure that pre-trends were similar, providing support for the underlying parallel trend assumption.

Second, consistent with the idea that early adolescence is a critical period for development, we find that uncertainty of the (economic and social) environment has a more severe impact on the socioemotional development of those affected in early versus later adolescence. To understand the malleability and adjustment process at different ages, we compare how the young cohort's socioemotional skills change (when aged 13 and 14) from before to after Reunification compared to how the older cohort's socioemotional skills change (when aged 16 and 17). Our result suggest that early adolescence is a critical age in terms of development of impulse control and self-confidence, while there is substantially less adjustment in late adolescence. While both cohorts incur negative effects, the effects are more than twice as large for the younger cohort. Despite the fact that younger cohorts are the ones that stand to (economically) benefit the most from the changes in opportunities (Azmat and Kaufmann, 2023), we find that they are the ones who experience more severely an impact on their socioemotional skills.

Thirdly, we find that the change in socioemotional development due to Reunification is linked to longer-term behaviors such as externalizing behaviors, behavioral control problems, and internalizing behaviors. The link is significantly stronger for the young (treated) cohort, indicating that the change in socioemotional skills in early adolescence of the young cohort (due to Reunification) has a significant impact on longer-run outcomes. The decrease in impulse control due to Reunification is linked to a significant increase in externalizing behaviors, consistent with findings in the literature according to which negative experiences or environmental shocks lead to increases in negative (school-related) externalizing behaviors. We also find that the decrease in impulse control is

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[1]Suicide rates have nearly doubled between 2007 and 2017, according to the Centers for Disease Control and Prevention (CDC).

[2]See also "It's Life or Death": The Mental Health Crisis Among U.S. Teens - NYT: https://www.nytimes.com/2022/04/23/health/mentalhealth-crisis-teens.html

linked to an increase in behavioral control problems (substance abuse) and internalizing behaviors related to mental health problems. The substantial decrease in self-confidence due to Reunification is also linked to longer-term behaviors, particularly internalizing behaviors and mental health.

Finally, we investigate whether, and to what extent, our results differ by gender. In the biological/ medical literature, the "fragile male" hypothesis (e.g. Trivers and Willard, 1973; Kraemer, 2000) has been well-established and has been linked to behavioral differences. In particular, males are more likely to engage in "risky" behavior (Juutilainen et al., 2004) and experience a stronger impact of negative environmental influences on their disruptive behavior at schools (Bertrand and Pan, 2013; Autor et al., 2019; Brenøe and Lundberg, 2018). We find that Reunification had a negative effect on the socioemotional development of both, adolescent boys and girls and, if anything, a somewhat stronger effect on girls (in terms of self-confidence). Importantly, however, the way in which the effect on socioemotional development is transmitted to long-term behaviors differs by gender. The decrease in impulse control due to Reunification increases externalizing behaviors and behavioral control problems, but only for boys. This is consistent with literature findings that show particularly negative effects of environmental shocks for externalizing (mostly school-related) behaviors for boys. Our findings show, however, that this is not due to gender differences in how socioemotional skills are affected (the effect on impulse control is gender-neutral), but in how changes in these skills are transmitted to longer-term behaviors. Furthermore, we find that the negative effect on self-confidence, which was particularly strong for girls, is only transmitted to longer-term behaviors for girls, specifically in terms of internalizing behaviors (i.e., related to suicidal tendencies), which so far has received relatively less attention in the literature.

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"). Significantly, 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

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Germany switched from state socialism to liberal democratic capitalism in a short period of time and without a gradual transition.[3]

This large and unexpected upheaval of the entire economic and political system created a substantial amount of uncertainty in this period. Upon Reunification, the economic system in East Germany was replaced and led to a substantial rise in unemployment (Hunt, 2008; Krueger and Pischke, 1995).[4] Bhaumik and Nugent (2011), for example, show that economic uncertainties (especially employment-related uncertainty) driven by Reunification led to an important decrease in childbirths. In general, Reunification had important effects on individuals' stress levels and wellbeing. Psychologists have described how 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 et al., 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 research is centered around investigating how Reunification impacted the socioemotional development of youths during the critical developmental phase of adolescence. Importantly, we provide causal evidence of the effect of a macro shock on the socioemotional skills of these youths, exploring variations in impact during different stages of adolescence, and examining the long-term implications for their behavior and their outlook on prospects in the labor market.

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[3]In our analysis, we use this sudden change in regime in East Germany to compare different cohorts of East German youths affected by Reunification at different times. This allows us to evade the concern that East and West Germany were already characterized by important social, cultural and political differences at the time of separation, as discussed by Becker, Mergele and Woessmann (2020).

[4]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).

3 Data and Descriptive Statistics

3.1 Longitudinal Study of Students in East Germany

The microdata used in the following analysis come from the Longitudinal Study of Students (1985-1995).[5] The study followed two cohorts of students in East Germany from 1985 to 1995, when students were between 9 and 21 years of age. This study is unique in that it followed students for several years prior to and several years after the Reunification of Germany. Students in the younger cohort were surveyed between ages 9 and 18 (i.e., from academic grade 3 to grade 12), while students in the older cohort were surveyed in the same calendar years between ages 12 and 21 (i.e., from academic grade 6 up to the first years of university/vocational training).

The survey focuses on the development of cognitive abilities, socioemotional skills, and mental health as well as of values, goals, and attitudes during childhood and adolescence until (young) adulthood. The data are, therefore, 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 socioemotional development, (psychological) wellbeing measures, and health-related behaviors and outlook. Importantly, the survey asked students about their socioemotional skills and their psychological wellbeing at several points in time before and after Reunification, allowing us to study whether and to what extent these measures are impacted by Reunification and relate to long-run outcomes. Given the longitudinal nature of the study, we can link changes in socioemotional skills (specifically, impulse control and self-confidence) to longer-run, post-Reunification behavioral, educational and health outcomes when students are young adults.

The surveyed sample was selected using multistage sampling, wherein first regions within East Germany and then schools were randomly selected, and then all students in the relevant academic cohorts were surveyed. All surveys were self-administered, ensuring students' anonymity (i.e., personally identifiable information was separated from the survey responses).

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[5]The study, in Germany called *Schülerintervallstudie Fähigkeiten/Risiko 1986-1995*, was initiated by the Central Institute for Youth Research, Leipzig (*Zentralinstitut für Jugendforschung (ZIJ)*) and continued by the German Youth Institute Munich, Regional Office Leipzig (*Deutsches Jugendinstitut München, Regionale Arbeitsstelle Leipzig*) The data are available at the GESIS Data Archive, Cologne, at the Leibniz Institute for the Social Sciences. A description of the study can be found at https://search.gesis.org/research_data/ZA6117

3.2 Variable description

In our short-run analysis on how Reunification affects adolescent socioemotional skills and how they develop, our main outcomes of interest are the socioemotional skills of young adolescents (12 to 14 years of age), as measured by their levels of Impulse Control and Self-Confidence.[6] Our measure of self-confidence is based on the extent of agreement with the statement *"I struggle with low self-confidence"*. To measure impulse control, individuals are asked about their agreement with the following statements: *"When provoked, I express my anger verbally"* and *"When provoked, I express my anger physically"*, which are combined using factor analysis. The survey elicits students' level of agreement with the above statements, where possible answers range from 1 ("very strongly agree") to 4 ("do not agree at all"). We reverse the scale of both variables so higher-value answers imply higher self-confidence and higher impulse control (for an overview of the different measures, see Panel A of Table 1).

In the second part of our analysis, we link changes in socioemotional skills around the time of Reunification to later outcomes, measured when individuals are aged 18 to 21. We classify these outcomes into the following four categories: *externalizing* behavior, *internalizing* behavior, *behavioral control* issues, and *economic outlook* (for an overview, see Panel B of Table 1).

In terms of externalizing behavior, we measure self-reported deviant behavior during the past 12 months. We use principal component analysis to create one index of externalizing behavior. There are three main measures: (1) *Physical fighting*, which captures whether the individual has deliberately beaten or hurt someone, (2) *Destroy property*, which captures whether the individual has deliberately destroyed or damaged private or public property, and (3) *Trouble with police*, indicating whether the individual has had problems with the police due to his or her actions.

For internalizing behavior, we create an index measuring individuals' suicidal tendencies based on the following two variables. (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.

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[6]According to the American Psychological Association dictionary of psychology (APA, n.d.), self-confidence is defined as the trust in one's own abilities and judgment, while impulse control is defined as the ability to resist an impulse or temptation and the ability to control its translation into an action. Problems with impulse control are considered a disorder. For instance, individuals with intermittent explosive disorder (IED), which is an impulse control disorder, experience sudden episodes of anger and have aggressive outbursts (see, Grant and Potenza, 2011). This type of anger management is directly measured in our Impulse Control variable.

With respect to behavioral control problems, we combine, via principal component analysis, the incidence of substance abuse and cigarette consumption. *Substance abuse* captures whether the individual consumes alcohol on a weekly basis (within the last three months of the interview) and/or has consumed at least two different types of drugs (within the last 12 months of the interview), and *Cigarette smoking* indicates whether the individual is a regular smoker.

We measure individuals' future outlook and expectations using three variables. First, *Optimism*, which is an indicator taking the value one in case individuals generally have an optimistic view on their own future and zero otherwise. Second, *Occupational Optimism*, which ranges from 1 ("not at all") to 4 ("completely") and measures how optimistic individuals are about their own occupational future. Third, *Employment Expectations* capturing individuals' optimism with future employment chances, with values ranging from 1 "not at all" to 4 "completely".

3.3 Summary statistics

In Table 1, we present the summary statistics of the socioemotional skill measures in early adolescence and of behaviors and long-run outlook in late adolescence/early adulthood.

In Panel A, we present descriptive statistics for adolescents' socioemotional skills. All measures capture individuals' agreement with the statements, as discussed in the previous section. We reverse the scale, such that higher values indicate better impulse control and higher self-confidence.

In Panel B, we present the different measures of behavior and outlook in late adolescence/early adulthood. The index for externalizing behavior is based on three variables: physical fighting, property damage and trouble with the police. We see that around 5% of young adults report having deliberately beaten or hurt someone in the past 12 months; 7.5% are involved with property damage and 2.6% report having been in trouble with the police. Internalizing behavior is based on a measure of suicidal tendencies, wherein almost 30% of young adults in our sample report ever having thought of suicide and 6.6% even thought about it multiple times.[7] With respect to behavioral control problems, smoking cigarettes on a regular basis is relatively common among the young adults (37%), while substance abuse is reported by 20% of the sample. Finally, with respect to outlook, we see that, on average, 59.9% of the sample has an optimistic view

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[7]In Appendix Table A.1, we compare our measures of externalizing and internalizing behaviors and behavioral control problems 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. Although there are some differences in the survey questions and reference periods (and the US sample is slightly younger), the average incidence and patterns are similar.

on their future in general. Looking more closely at prospects on the labor market, values range from 1 to 4 in terms of optimism about their professional (or occupational) future and employment expectations.

4 Empirical Methodology

This section introduces the empirical strategy, which is presented in two parts. First, we aim to identify the causal effect of a shock to adolescents' environment on their socioemotional skills by partialling out the natural age evolution of socioemotional skills in the absence of a shock. Second, we want to shed light on how the effects differs between the two cohorts who are affected by the shock at different ages (in early versus late adolescence).

4.1 Environment Effects: Difference-in-Differences by Grade

We causally estimate the effect of a macro shock on socioemotional skills using the quasi-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 apply a difference-in-differences (DID) framework that uses variation in the timing of Reunification for the two cohorts of students, who have a three-year age gap, to identify its effect on socioemotional skills. We analyze the change in socioemotional skills of the younger cohort before and after Reunification (i.e., when in grades 7 and 8, ages 12 to 14), using as a control for the counterfactual trend, the evolution of the older cohort's socioemotional skills between the same ages (academic grades), taking place before Reunification. This allows us to isolate a change in socioemotional skills that is not driven by age effects.

The "treatment" of interest is that of the macro shock of Reunification in October 1990 on the socioemotional skills of the younger cohort. The older cohort serves as the "control" group for the (counterfactual) trend across grades for the younger cohort. This group captures how socioemotional skills would have evolved, in the absence of Reunification. For instance, the older cohort is aged 14 in 1988, which was in the pre-Reunification period, while the younger cohort is aged 14 in 1991, which was in the post-Reunification period. The empirical design is such that we focus on the grades directly pre- and post-Reunification for the younger cohort, which allows us to identify the short-run effects of Reunification and helps compute the correct standard errors (Bertrand, Duflo, Mullainathan, 2004). More generally, we estimate the following equations:

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$$S_{icg} = \beta_0 + \beta_1 T_{ic} + \beta_2 P_{ig} + \beta_3 (T_{ic} P_{ig}) + X_{ic}\delta + \epsilon_{icg} \tag{1}$$

$$S_{icg} = \beta_0 + \beta_2 P_{ig} + \beta_3 (T_{ic} P_{ig}) + D_i + \epsilon_{icg} \tag{2}$$

where S_{icg} is the measure of the socioemotional skill of student i in cohort c in grade g. T_i is a dummy variable indicating "treated cohort" (i.e., taking the value of one if the individual belongs to the younger cohort and zero otherwise), P_{ig} indicates the "post" period, more generally reflecting the student's academic grade. Since we restrict the main analysis to the grade the treated cohort is in shortly before and the one shortly after Reunification (i.e., grades 7 and 8, when individuals are between ages 12 and 14), P_{ic} is a dummy variable that has the value of 1 if the individual is in grade 8 (where grade 7 is the excluded category). The variable of interest is $(T_{ic} P_{ig})$, which interacts the "treated cohort" and the "post"-period indicator and takes the value of one if a student is from the younger cohort and is 14 (grade 8), which is in the post-Reunification period for the younger cohort. X_{ic} is a vector of predetermined individual-specific characteristics. Alternatively, we include individual fixed effects D_i (see Equation 2). We estimate Equation 1 and Equation 2 using ordinary least squares. Standard errors are adjusted for clustering at the school level.

The DID approach relies on the parallel trend assumption, which is that –without German Reunification– the younger cohort's socioemotional development between ages 12 and 14 would have been the same as that of the older cohort between ages 12 and 14. We provide evidence in favor of the parallel trend assumption by conducting a placebo test in which we compare the evolution of the socioemotional skills between the two cohorts in the pre-period.

4.2   Age Effects: Difference-in-Differences by Year

A relevant question is whether the age (or educational stage) at which individuals are affected by a shock to their environment is relevant for the development of their socioemotional skills. To understand this, we analyze whether the younger cohort, aged 12-14 years around the time of Reunification, and the older cohort, aged 15-17 years, were impacted differentially by Reunification, comparing the evolution in terms of their socioemotional skills over the same years (i.e., shortly before Reunification in October 1990 compared to shortly after). Both cohorts are thus in the same environment, but hit by Reunification at different ages. Applying a difference-in-differences (DID) framework by *years* allows us investigate the adjustment process of the young cohort relative to the

old around the time of Reunification.

Methodologically, to analyze the *causal effect* of Reunification on the younger cohort, the relevant counterfactual is the change in outcome of the older cohort when in the same *grades*, all of which were before Reunification (as discussed in the previous subsection).[8] Here, in a difference-in-differences framework by *years*, both cohorts are potentially affected by Reunification. The framework, however, enables us to understand the extent to which the older cohort could adjust relative to the younger one. For example, if the estimate of the difference-in-differences analysis comparing the same years is zero, this implies that the older cohort's socioemotional skills respond to Reunification to the same extent as did the younger one (while the causal effect is given by the difference-in-differences analysis using as the counterfactual the evolution over the same grades, which –for the older cohort– were all before Reunification). A non-zero estimate instead tells us how much more the younger cohort adjusted relative to the older one. More specifically, if the DID analysis using years produces an estimate as large as that of the DID analysis using grades, then the DID analysis using years also estimates the full causal effect of Reunification on the younger cohort, which implies that the older cohort could not adjust at all. More generally, we estimate the following equations:

$$S_{ict} = \beta_0 + \beta_1 T_{ic} + \beta_2 P_{it} + \beta_3 (T_{ic}P_{it}) + X_{ic}\delta + \epsilon_{ict} \tag{3}$$

$$S_{ict} = \beta_0 + \beta_2 P_{it} + \beta_3 (T_{ic}P_{it}) + D_i + \epsilon_{ict} \tag{4}$$

where the specifications expressed in Equation 3 and Equation 4 measure the change in socioemotional skills of student i in cohort c at time t without and with fixed effects, respectively. T_{ic} is a dummy variable indicating being in the "treated" younger cohort (i.e., taking the value of one if the individual belongs to the younger cohort and zero otherwise), P_{it} indicates the "post" Reunification period (i.e., post-1990). The variable of interest is $(T_{ic}P_{it})$, which interacts the "treated cohort" and the "post"-Reunification indicator and takes the value of one, if a student is from the younger cohort in 1991, i.e. post-Reunification.

5   Results

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[8]The DID by grade rules out a potential contamination of the control group and allows to control more carefully for age (life-cycle) effects, which are likely to be particularly important during adolescence.

5.1 Environment Effect: Differences-in-Differences by Grade

Table 2 (Panel A) shows that the macro shock to adolescents' environment had drastic effects on the development of their socioemotional skills between ages 12 and 14. Panel A presents the impact of Reunification on impulse control and self-confidence employing a difference-in-differences approach, as discussed in the previous section. Columns (1) and (2) show that Reunification led to a substantial decrease in terms of impulse control (by 34 percent of a standard deviation). The results are very similar without and with controls for individual fixed effects (compare Columns (1) and (2)). Similarly, Reunification led to a substantial decrease in the level of self-confidence of 45 percent of a standard deviation (Columns (3) and (4), without and with individual fixed effects, respectively).

In Panel B of Table 2, we conduct a placebo experiment to test whether the pre-trends in socioemotional skills are similar for the two cohorts. We estimate a differences-in-differences specification (without and with fixed effects) comparing the evolution of both groups' socioemotional skills before age 12. The results are consistent with the parallel trend assumption, in that the pre-trends for both cohorts are very similar (the estimated coefficient is close to zero and insignificant). This lends support to our causal interpretation of the effect of Reunification on youths' socioemotional skills.

5.2 Age Effect: Differences-in-Differences by Year

Table 3 shows the extent to which the socioemotional skills of the younger cohort, aged 12-14 around the time of Reunification, adjust to the shock relative to the older cohort, aged 15-17, over the same period (i.e., before and after Reunification). We present coefficients based on a regression without fixed effects in Columns (1) and (3) and with fixed effects in Columns (2) and (4)) for socioemotional skills, as measured by impulse control and self-confidence, respectively. Column (2) of Table 3 shows a 0.26 standard deviation fall in impulse control among the younger cohort (relative to the older one), while self-confidence falls by a similar magnitude (Column 4).

A comparison of the estimated coefficients to the (causal) effects based on a difference-in-differences design by grade (Table 2), shows that while the socioemotional development of the older cohort is indeed affected by Reunification (since the DID-by-year coefficient is smaller than the DID-by-grade coefficient), it is to a much lesser extent than for those affected during their early adolescence. In particular, we find that the impact on impulse control is more than three times as large (0.34 standard deviations compared to $0.34 - 0.26$) and self-confidence is almost twice as large (0.45 standard

14

deviations compared to $0.45 - 0.27$).[9]

Overall, our findings show that the economic environment is an important determinant of socioemotional skills, and that the age at which individuals experience a shock to their environment matters. In particular, impulse control and self-confidence appear more malleable in early than in late adolescence.

6 Long-Run Behavior and Labor Market Outlook

6.1 Empirical Methodology

In this section, we study how the changes in socioemotional skills among adolescents resulting from the macro shock transmit to their later behavior and outcomes. To do so, we link the change in socioemotional skills before and after Reunification to outcomes approximately five years later when the youths have become young adults (ages 18 to 21). For both cohorts, this is in the post-Reunification period. In particular, we link the changes in socioemotional skills for each cohort during Reunification to their behavior (externalizing behaviors, internalizing behaviors, and behavioral control problems), as well as their outlook about the future (general optimism about the future, occupational optimism, and employment expectations).

Our interest is not in the effect of the macro shock on long-run outcomes per se, but on how the changes in socioemotional skills are linked to behaviors, *and* whether and how the age matters for the adjustment of socioemotional skills to shocks. In our analysis so far, we have estimated a causal effect of the shock on socioemotional skills and shown that individuals' response to the shock depends on when in happens during adolescence. As an important next step, the goal is to investigate whether there is a lasting impact of the change in socioemotional skills and whether it depends on the age at which the shock took place.

In terms of the empirical strategy, we analyze how a change in socioemotional skills in early adolescence (i.e., for the younger cohort who experience the shock between ages 12 and 14) affects long-run behavior and other outcomes as compared with when it takes place in later adolescence (i.e., for the older cohort who were aged 15 to 17). We therefore estimate the following equation:

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[9]As discussed in Subsection 4.2, the DID-by-year reflects how much the young cohort responds to the shock *relative* to the older cohort. This implies that the difference between DID-by-grade (causal effect) and DID-by-year can be interpreted as by how much the older cohort responds.

$$B_{ic} = \gamma_0 + \gamma_1 \Delta S_{ic} + \gamma_1^T (\Delta S_{ic} T_{ic}) + \gamma_2 S_{ic,pre} \qquad (5)$$
$$+ \gamma_2^T (S_{ic,pre} T_{ic}) + \gamma_3 T_{ic} + \gamma_4 X_{ic} + \epsilon_{ic}$$

where B_{ic} is an indicator for a certain behavior or outlook measure of individual i in cohort c, T_{ic} is an indicator for belonging to the young (treated) cohort, $S_{ic,pre}$ captures the level of a certain socioemotional skill at baseline (i.e., the individuals' socioemotional skill levels at age 12 before Reunification for both cohorts), and ΔS_{ic} captures how a certain socioemotional skill indicator changed from before to after Reunification (i.e. when the young cohort is aged 12 to 14, while the older cohort is aged 15 to 17).

The coefficient of interest is γ_1^T, which measures how the change in socioemotional skills between ages 12 and 14 differentially affects individuals' later behavior and outcomes, compared with it taking place between 15 to 17. Given the specification above, we (indirectly) control for potential time-constant factors that contribute to a correlation between socioemotional skills and long-run outcome (such as family background characteristics) by holding the level of socioemotional skills at age 12 (prior to Reunification for both cohorts) constant to focus on the link between changes in socioemotional skills and long-run behavior.

6.2 Results

Table 4 and Table 5 summarize the main coefficients of interest illustrating how the changes in socioemotional skills are linked to the different long-run outcomes for the young cohort, treated by Reunification between ages 12 and 14, relative to the older cohort. The full set of regression coefficients are presented in Appendix Table A.2 and Table A.3. Table 4 presents the results for externalizing behavior (Columns (1) and (2)), internalizing behavior (Columns (3) and (4)), and behavioral control problems (Columns (5) and (6)). Table 5 shows the results for optimism (Columns (1) and (2)), occupational optimism (Columns (3) and (4)) and employment expectation (Columns (5) and (6)). In all specifications, we include controls for treatment, pre-Reunification levels of socioemotional skills, and their interaction with treatment.

In Table 4, Columns (1) and (2) show that externalizing behavior (measured as an index of the propensity of physical fights, destruction of property and trouble with the police) in young adulthood is strongly linked to the changes in impulse control in adolescence. A one-standard-deviation decrease in impulse control, post- versus pre-Reunification, increases externalizing behavior by 15 percent of a standard deviation

(significant at the one percent level). The interaction with treatment suggests that the effect is borne entirely on the young "treated" cohort, in that the change in impulse control is linked to longer-run externalizing behavior only for them. For the young cohort, a one-standard-deviation decrease in the level of impulse control increases externalizing behavior by 26 percent of a standard deviation (the difference to the effect for the older cohort is significant at the ten percent level). Changes in self-confidence do not influence externalizing behavior, with coefficients close to zero (see Online Appendix Table A.2 for the full set of coefficients).

In Columns (3) and (4), we show that there is a sizeable impact of a change in socioemotional skills on internalizing behavior (linked to adolescents' mental health), which is again driven by the young "treated" cohort. Both socioemotional indicators are negatively related to the longer-run propensity toward suicidal thinking (see Online Appendix Table A.2 for the full set of coefficients). We find that a one-standard-deviation decrease in self-confidence increases internalizing behavior by 12 percent of a standard deviation (significant at five percent). This effect is significantly stronger for the younger cohort, where the point estimate is 22 percent of a standard deviation. A fall in impulse control also increases internalizing behavior, but again only for the young "treated" cohort, where a one-standard-deviation decrease leads to an increase in internalizing behavior of 13 percent of a standard deviation (the difference to the effect for the old cohort is significant at the 5 percent level).

We next analyze the effect of changes in socioemotional skills on later engagement in "risky" behavior – often referred to in the psychology literature as behavioral control issues – which combines information on regular cigarette consumption and substance abuse (alcohol consumption and/or drugs). Columns (5) and (6) of Table 4 display the effect on behavioral control problems.[10] We find that a change in impulse control is negatively related to problems of behavioral control. A one-standard-deviation decrease in impulse control leads to an 11 percent of a standard deviation increase in behavioral control problems (significant at one percent). This effect is again driven entirely by the young "treated" cohort, for whom a decrease in impulse control increases behavioral control problems by 18 percent (the difference to the older cohort is significant at five percent). Changes in self-confidence do not significantly affect the engagement in risky behavior.

In Table 5, we present the main coefficients on how changes in socioemotional skills in (early) adolescence are linked to the economic outlook of the young adults.[11] Columns

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[10] The full set of coefficients for behavioral control problems can be found in Online Appendix Table A.2.

[11] The full set of coefficients for behavioral control problems can be found in Online Appendix Table A.3.

(1) and (2) show that changes in self-confidence in adolescence are strongly related to optimism about the future. A one-standard-deviation decrease in self-confidence is related to a decrease in optimism about the future by 6 percent of a standard deviation. Once again, the effect is much larger among the young "treated" cohort, who experience the shock to socioemotional skills in younger adolescence (reduction in optimism by 12 percent of a standard deviation relative to the effect for the older cohort and the difference is significant at the one percent level). From Columns (3) and (4), we see that changes in self-confidence are also linked to optimism with respect to the occupational landscape. This is only the case for the younger cohort, for whom a one-standard-deviation decrease in the level of self-confidence increases occupational optimism by 27 percent of a standard deviation relative to the effect on the older cohort. In the last two columns, Columns (5) and (6), we see that, similarly, changes in socioemotional skills are also linked to expectations about the labor market and, in particular, employment expectations. As with occupational optimism, we find that the impact is entirely borne by those from the younger cohort (the effect is 22 percent of a standard deviation larger for the young "treated" cohort relative to the older cohort and the difference is significant at the five percent level).

In summary, the results suggest that the overall negative effect of Reunification on young adolescents' socioemotional development in the short-run are linked and transmitted into worse behavioral outcomes in young adulthood. Moreover, the impact is worse for individuals affected in their early, rather than late, adolescence. Impulse control decreased among both cohorts (albeit less for the old), but the change is linked to externalizing behavior and behavioral control problems only for the younger cohort. In terms of the impact of changes in socioemotional skills on internalizing behavior, we find that changes in both impulse control and self-confidence are relevant. Importantly, the age of the shock seems to matter again, since we find that the persistent effects on long-term behaviors are substantially more relevant for the younger cohort. The negative effect of Reunification on adolescents' self-confidence also has a fundamental impact on the economic outlook and general optimism of these individuals when they are young adults (while the change in impulse control is not linked to these outcomes). Again this effect is only found for the young "treated" cohort, whose socioemotional skills are impacted by Reunification during early adolescence.[12]

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[12]We complement our analysis of socioemotional (noncognitive) skills by examining the impact on individuals' cognitive skills (see, e.g., Heckman et al., 2006; and Cunha and Heckman, 2007). To do this, we compute an index of cognitive ability derived from a principal component analysis based on outcomes in two standardized tests (verbal and math) and school-based German and math grades. In Table A.6 we show that Reunification did not change individuals' cognitive skills.

7 Gender Differences

7.1 Short-Run Impact of Shock on Socioemotional Development

Environment Effect: Difference-in-Differences by Grade In Table 6, we analyze whether the shock to adolescents' environment affects socioemotional skills of boys and girls differently. To do this, we estimate versions of Equation 1 and Equation 2, which are fully interacted with a female dummy. Columns (1) and (2) show that (with and without fixed effects) impulse control decreases similarly for both genders. This finding is important in that if one were to focus only on changes in *externalizing behavior* (such as disruptive and aggressive behavior) following a major life disruption, one would observe those changes predominantly in boys, while girls would appear unaffected (or less affected). This could give the impression that socioemotional skills of boys are more severely affected by adverse events (see e.g., Fortin et al., 2015; Autor et al. 2021). However, by directly measuring socioemotional skills, we show that the effects are similar for both girls and boys.

Columns (3) and (4) show that compared to adolescent boys, the self-confidence of girls is more negatively impacted by the macro shock. We find that girls' self-confidence levels decrease by 64 percent of a standard deviation, but only by 22 percent of a standard deviation for boys. This finding again highlights that, if anything, girls are more strongly affected by the macro shock in terms of their socioemotional skill development than boys.[13] The stronger changes in self-confidence among girls is in line with findings in the neuroscience literature reporting greater social anxiety among females in response to a negative social environment (Burnett et al., 2011) and findings in the psychology/psychopathology literature of females' greater vulnerability to anxiety and depression in response to stress, especially during adolescence (Rudolph, 2002). In Panel B of Table 6, we repeat the placebo experiment to show that pre-trends in socioemotional skills of the two cohorts are similar, both for boys and girls in the two cohorts.

Age Effect: Difference-in-Differences by Year Next, we analyze whether there are gender differences in terms of what are the more sensitive periods during which socioemotional skills adjust to environmental shocks, again comparing the response of the younger cohort affected during early adolescence (age 12-14 years old) with the one of the older cohort affected during late adolescence (15-17 years old).

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[13]In line with results in Subsection 5.1, we find no significant effects of the Reunification on cognitive skills for either gender.

The results presented in Table 7 show interesting gender differences in the adjustment of socioemotional skills. For adolescent boys, the coefficient on the interaction between treatment and post-Reunification is 0.22 standard deviation for impulse control and 0.23 for self-confidence (see Columns (2) and (4)). These coefficients are almost identical in magnitude to the previous analysis, which uses the older cohort's evolution of socioe-motional skills between the same *ages* to account for the counterfactual trend (compare Table 6). This suggests that the impact is almost entirely borne on the younger cohort (i.e., there is no significant impact of the shock on socioemotional development of the older cohort). For adolescent girls, we find that, like for boys, Reunification impacts the impulse control only for the younger cohort (compare Column (2) of Table 7 and Table 6). However, for self-confidence, we do see some impact in later adolescence, albeit smaller, less than half of the effect it has on the younger cohort (compare Column (4) of Table 7 and Table 6).

7.2 Links to Long-Run Behavior and Outcomes

To understand whether there are gender differences in how changes in socioemotional skills manifest themselves in terms of long-term behavior and outlook, we estimate ver-sions of Equation 3 and Equation 4, which –instead with a treatment dummy– are fully interacted with a female dummy. In doing so, we measure how the socioemotional skill change induced by Reunification (i.e., between ages 12 to 14 for the young and ages 15 to 17 for the old cohort) differentially affects young males' and females' behavior and outlook.

The results presented in Table 8 show some important patterns and differences. First, regarding the impact of changes in socioemotional skills on *externalizing behavior* and *behavioral control problems*, we find that the key relevant psychological measure is impulse control, but only for young men. In particular, a decrease in impulse control by one standard deviation increases externalizing behavior of young men by 33 percent of a standard deviation and behavioral control problems by 29 percent of a standard deviation. This suggests, in line with the literature, that following a (negative) shock, the expression of externalizing behavior among men will increase. Second, in terms of the impact of changes in socioemotional skills on *internalizing behavior*, we find that mainly changes in self-confidence are relevant, which is entirely driven by young women. A decrease in self-confidence by one standard deviation increases internalizing behavior of young women by 18 percent of a standard deviation. Third, the impact of changes in socioemotional skills on *economic outlook* does not differ among young men and women

(see Table 9).

Altogether, focusing on gender differences, we document that the short-term effects of Reunification on socioemotional development are similarly negative for boys and girls, and this is transmitted to longer-term economic expectations and optimism in a similarly negative manner. This is despite the common perception that males are more strongly impacted by (negative) circumstances or changes in their environment. We find, however, that adverse shocks, via decreases in socioemotional skills, led to worse externalizing behaviors and behavioral control problem, but only among young men. For women, the transmission operates through internalizing behavior, which is harder to observe, but directly related to critical mental health outcomes.

8   Conclusion

We identify the enduring impact of macroeconomic shocks on the development of socioemotional skills during critical formative years. In this paper, we exploit the large quasi-experiment of German Reunification to causally estimate the effect of a shock to adolescents' environment and the resulting increase in uncertainty on their socioemotional skills, and how it propagates to later behavior and (labor market) outlook as young adults.

We document that the shock, which created a highly uncertain environment for East Germans, had a sizeable negative effect on the socioemotional skills of young adolescents. Exploring whether the age (or educational stage) at which individuals are affected by a macro shock is relevant for changes in socioemotional skills, we find that for younger adolescents (aged 13-14), change in environment has an immense impact, while those at a later stage in adolescence (aged 16-17), this is much less the case. By investigating whether changes in socioemotional skills of adolescents have a lasting (negative) impact on them as young adults, we establish important links between socioemotional development and expressions of behavior and (labor-market) optimism and expectations, which vary depending on the socioemotional skill measure and gender.

Our analysis offers several important results that are relevant from an academic, as well as a policy perspective. First, we provide (rare) evidence for a causal link between increased uncertainty due to a substantial shock to the economic and social environment and youths' socioemotional development. Using direct measures of socioemotional skills, we show that among early-adolescent East Germans, impulse control and self-confidence decreased considerably within a relatively short time span from before to after Reunification (using as a counterfactual trend the development of a slightly older cohort between

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the same ages prior to Reunification). Second, our study highlights that changes in adolescent socioemotional skills are tightly linked to later behaviors, which –in turn– are known to have important implications for their outcomes as adults – both, pecuniary and non-pecuniary. Third, our findings underline the significance of the timing of such changes during adolescence, whereby a (negative) shock in early adolescence is substantially more consequential than at a later stage. Finally, we also offer important insights into gender differences in adolescent development, wherein adverse shocks affect the socioemotional skills of both males and females, but are transmitted to later behaviors and outcomes in distinct ways that would suggest different targeting.

To conclude, our study highlights the importance of studying and promoting socioemotional development during adolescence. The malleability of socioemotional skills during this developmental stage have critical implications for long term behaviors and well-being, including mental health. It is crucial to gain insight into these skills, the extent to which they can change and develop under uncertainty, and their consequences for relevant outcomes.

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Tables

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Table 1: Variable Description

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	Description	Answers	Mean	Std.Dev.	N.Ind.
Panel A:					
Impulse Control	Combined index.				
Anger expression 1	Physical expression of anger.	1 4	3.227	0.848	877
Anger expression 2	Verbal expression of anger.	1 4	2.917	0.841	877
Self-Confidence	Level of self-confidence.	1 4	3.383	0.746	877
Panel B:					
Externalizing Behavior	Combined index.				
Physical fighting	Have you deliberately beaten or hurt someone in the last 12 months?	0 1	0.053	0.225	656
Property Damage	Have you deliberately destroyed or damaged private/others' property in the last 12 months?	0 1	0.075	0.263	656
Trouble with police	Have you been in trouble with the police due to rampage or rioting?	0 1	0.026	0.159	656
Internalizing Behavior	Combined index.				
Suicidal thoughts	Have you ever had suicidal thoughts?	0 1	0.296	0.457	656
Repeated suicidal thoughts	Have you had suicidal thoughts more than once?	0 1	0.066	0.248	656
Behavioral Control Problems	Combined index.				
Cigarette smoking	Individual is a regular smoker.	0 1	0.369	0.483	656
Substance abuse	Consume alcohol on weekly basis and/or consumed at least two types of drugs.	0 1	0.221	0.415	656
Economic Outlook					
Optimism	Indicator measuring an optimistic view on the individual future.	0 1	0.599	0.491	673
Occupational Optimism	How optimistic are you about your occupational/professional future?	1 4	2.897	0.709	673
Employment Expectations	How optimistic are you about the chances of getting a job?	1 4	2.691	0.818	673

Notes: *Impulse Control* combines the students' strength of agreement with expressing their anger in a physical and verbal way using factor analysis, we reverse the scale so a higher value indicates better impulse control. *Self-Confidence* captures students' agreement with having problems with low self-confidence, again we reverse the scale so higher values indicate higher self-confidence. *Externalizing Behavior* is measured by an index combining the incidence of physical fighting, having damaged property, and having had trouble with the police; hereby higher values imply stronger expressions of externalizing behavior. *Internalizing behavior* is captured by an index based on the student's (repeated) suicidal thoughts with higher values indicating more internalizing behavior. *Behavioral Control Problems* is an index based on cigarette consumption (indicator for regular/ occasional consumption) and substance abuse indicating that the student consumes alcohol on a weekly basis and/ or has consumed at least 2 different types of drugs; again higher values imply stronger behavioral control problems. *Optimism* is an indicator capturing whether the youth has an optimistic view of the own general future. *Occupational Optimism* measures optimism about the youth's occupational future and ranges from 1 ("do not agree at all") to 4 ("very strongly agree"). *Employment Expectations* measures the optimism about future employment chances and ranges from 1 ("do not agree at all") to 4 ("very strongly agree").

Table 2: Effect of Reunification (shock) on Socioemotional Skills

Panel A	Main Results			
	Impulse Control		Self-Confidence	
	[1]	[2]	[3]	[4]
Treated Cohort x Post Reunification	-0.339***	-0.339***	-0.449***	-0.449***
	[0.067]	[0.067]	[0.082]	[0.081]
Treated Cohort (Young)	0.055		0.045	
	[0.074]		[0.062]	
Post Reunification (Age 14)	0.071	0.071	0.013	0.013
	[0.044]	[0.044]	[0.041]	[0.041]
Constant	0.044	0.067***	0.088**	0.107***
	[0.048]	[0.017]	[0.042]	[0.019]
N Observations	1754	1754	1754	1754
N Individuals	877	877	877	877
N Schools	62	62	62	62
Individual FE	NO	YES	NO	YES
R-squared	0.012	0.029	0.030	0.064

Panel B	Placebo-Tests			
Treated Cohort x Post Reunification	-0.035	-0.033	0.055	0.055
	[0.066]	[0.064]	[0.069]	[0.066]
Treated Cohort (Young)	0.020		-0.023	
	[0.072]		[0.056]	
Post Reunification	0.067	0.067	0.013	0.013
	[0.042]	[0.042]	[0.042]	[0.042]
Constant	0.007	0.015	0.000	-0.009
	[0.047]	[0.016]	[0.043]	[0.016]
N Observations	1730	1730	1727	1727
N Individuals	877	877	877	877
N Schools	62	62	62	62
Individual FE	NO	YES	NO	YES
R-squared	0.001	0.003	0.001	0.002

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. The outcome variables are measures of socioemotional skills, namely Impulse control (in Columns (1) and (2)) and Self-Confidence (Columns (3) and (4))."Treatment" takes value one (zero) if the individual is in the young (old) cohort. "Post" represents the individual's age. In Panel A, "Post" is a dummy variable that takes the value of one, if the age of the individual is 14 (this is pre-Reunification for the older cohort and post-Reunification for the younger cohort) and zero when aged 12 (i.e., pre-Reunification for both cohorts). "Treatment x Post" takes the value one, if the individual is in the young cohort and aged 14 (i.e. post-Reunification). In Panel B, displays results from a placebo test that compares the change in outcomes of both cohorts in the pre-Reunification period to lend support to the parallel trend assumption.

Table 3: Adjustment Process of Socioemotional Skills

	DID by year			
	Impulse Control		Self-Confidence	
	[1]	[2]	[3]	[4]
Treated Cohort x Post Reunification	-0.236***	-0.263***	-0.242**	-0.266***
	[0.086]	[0.078]	[0.096]	[0.100]
Treated Cohort (Young)	0.091		0.153**	
	[0.076]		[0.066]	
Post Reunification (Year 1991)	-0.022	0.006	-0.182***	-0.157**
	[0.070]	[0.060]	[0.067]	[0.073]
Constant	0.068	0.110***	0.059	0.133***
	[0.053]	[0.018]	[0.048]	[0.023]
N Observations	1473	1473	1471	1471
N Individuals	825	825	825	825
N Schools	62	62	62	62
Individual FE	NO	YES	NO	YES
R-squared	0.010	0.036	0.028	0.085

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. The outcome variables are measures of socioemotional skills, namely Impulse control (in Columns (1) and (2)) and Self-Confidence (Columns (3) and (4)). "Treatment" takes value one (zero) if the individual is in the young (old) cohort. "Post" represents the individual's age. In Panel A, "Post" is a dummy variable that takes the value of one, if the individual is surveyed in year 1991 (this is age 17 the older cohort and age 14 for the younger cohort) and zero if the individual is surveyed in 1989 (i.e., age 15 for the older cohort and age 12 for the younger cohort). "Treatment x Post" takes the value one, if the individual is in the young cohort in 1991 (i.e. post-Reunification).

Table 4: Links to Long-run Behaviors (aged 18-21)

	Externalizing Behavior		Internalizing Behavior		Behav. Control Problems	
	[1]	[2]	[3]	[4]	[5]	[6]
Change in Socioemotional Skills						
Impulse Control	-0.148***	-0.046	-0.012	0.072	-0.112***	-0.018
	[0.053]	[0.056]	[0.040]	[0.051]	[0.037]	[0.050]
Impulse Control x Treated		-0.212*		-0.199**		-0.165**
		[0.110]		[0.082]		[0.079]
Self-Confidence	0.030	0.014	-0.116**	-0.010	0.039	0.010
	[0.052]	[0.048]	[0.046]	[0.054]	[0.037]	[0.061]
Self-Confidence x Treated		0.001		-0.213**		0.063
		[0.117]		[0.090]		[0.076]

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. Each column represents a separate regression for which the coefficient on the change in socioemotional skills are displayed, i.e., the change prior versus post-Reunification (which is between ages 12 to 14 for the young cohort and between ages 15 to 17 for the older cohort). As shown in Table 2 and Table 3, both socioemotional skill measures decrease in response to Reunification, so that the changes in socioemotional skills are on average negative. Columns [1]/[2] report the effects of the socioemotional skill changes on externalizing behavior, which is an index based on the propensity to fight, destroy property, and to have trouble with the police. Columns [3]/[4] report the effects on an index for internalizing behavior based on (repeated) suicidal thoughts. Columns [5]/[6] report effects on behavioral control problems measured by an index capturing cigarette consumption and substance abuse (alcohol and drugs). All regressions control for the level of the relevant socioemotional skill measure at age 12 (i.e., prior to Reunification for both cohorts) and for treatment assignment indicating whether the student belongs to the young cohort. All outcome variables are measured after Reunification, when individuals are aged 18 to 21. The full set of coefficients, including all included controls, are displayed in Online Appendix Table A.2.

Table 5: Links to Long-run Economic Outlook (aged 18-21)

	Optimism		Occupational Optimism		Employment Expectations	
	[1]	[2]	[3]	[4]	[5]	[6]
Change in Socioemotional Skills						
Impulse Control	0.012	-0.014	-0.030	-0.056	-0.026	0.010
	[0.022]	[0.037]	[0.039]	[0.071]	[0.047]	[0.094]
Impulse Control x Treated		0.042		0.054		-0.073
		[0.048]		[0.090]		[0.108]
Self-Confidence	0.059***	0.005	0.052	-0.094	0.066	-0.043
	[0.021]	[0.026]	[0.054]	[0.068]	[0.049]	[0.080]
Self-Confidence x Treated		0.118***		0.281***		0.217**
		[0.040]		[0.098]		[0.099]

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. Each column represents a separate regression for which the coefficient on the change in socioemotional skills are displayed, i.e., the change prior versus post-Reunification (which is between age 12 to 14 for the young cohort and between age 15 to 17 for the older cohort). As shown in Table 2 and Table 3, both socioemotional skill measures decrease in response to Reunification, so that the change in socioemotional skills is on average negative. Columns [1]/[2] report effects on Optimism which indicates an optimistic view on one's future. Columns [3]/[4] reports effects on the satisfaction with one's expected occupational future. Columns [5]/[6] reports effects on expected employment chances. All regressions control for the level of the relevant socioemotional skill measure at age 12 (i.e., prior to Reunification for both cohorts) and for treatment assignment indicating whether the student belongs to the young cohort. All outcome variables are measured after Reunification, when students are aged 18 to 21. The full set of coefficients, including all included controls, are displayed in Online Appendix Table A.3.

Table 6: By Gender: Effect of Reunification (shock) on Socioemotional Skills

Panel A	Main Results			
	Impulse Control		Self-Confidence	
	[1]	[2]	[3]	[4]
Treated Coh. x Post Reuni. x Female	-0.092	-0.092	-0.427***	-0.427***
	[0.165]	[0.165]	[0.144]	[0.144]
Treated Cohort x Post Reunification	-0.288***	-0.288***	-0.217*	-0.217*
	[0.108]	[0.108]	[0.109]	[0.109]
Treated Cohort (Young)	0.154		0.056	
	[0.114]		[0.091]	
Treated Cohort x Female	-0.191		-0.016	
	[0.157]		[0.133]	
Post Reunification (Age 14)	0.086	0.086	-0.056	-0.056
	[0.060]	[0.060]	[0.063]	[0.063]
Post Reunification x Female	-0.028	-0.028	0.130	0.130
	[0.102]	[0.102]	[0.100]	[0.100]
Female	0.336***		-0.160*	
	[0.112]		[0.092]	
Constant	-0.135*	0.067***	0.173***	0.107***
	[0.072]	[0.017]	[0.062]	[0.019]
N Observations	1754	1754	1754	1754
N Individuals	877	877	877	877
N Schools	62	62	62	62
Individual FE	NO	YES	NO	YES
R-squared	0.029	0.030	0.046	0.074

Panel B	Placebo-Tests			
Treated Coh. x Post Reuni. x Female	0.196	0.163	-0.205	-0.178
	[0.152]	[0.155]	[0.170]	[0.168]
Treated Cohort x Post Reunification	-0.142	-0.121	0.165	0.150
	[0.093]	[0.096]	[0.102]	[0.100]
Treated Cohort (Young)	0.209**		-0.050	
	[0.099]		[0.093]	
Treated Cohort x Female	-0.355**		0.055	
	[0.139]		[0.145]	
Post Reunification (Age 14)	0.081	0.081	-0.057	-0.057
	[0.058]	[0.058]	[0.064]	[0.064]
Post Reunification x Female	-0.026	-0.026	0.133	0.133
	[0.098]	[0.098]	[0.102]	[0.102]
Female	0.327***		-0.164*	
	[0.109]		[0.095]	
Constant	-0.167**	0.015	0.087	-0.009
	[0.070]	[0.016]	[0.064]	[0.016]
N Observations	1730	1730	1727	1727
N Individuals	877	877	877	877
N Schools	62	62	62	62
Individual FE	NO	YES	NO	YES
R-squared	0.018	0.005	0.005	0.004

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. The outcome variables are measures of socioemotional skills, namely Impulse control (in Columns (1) and (2)) and Self-Confidence (Columns (3) and (4))."Treatment" takes value one (zero) if the individual is in the young (old) cohort. "Post" represents the individual's age. In Panel A, "Post" is a dummy variable that takes the value of one, if the age of the individual is 14 (this is pre-Reunification for the older cohort and post-Reunification for the younger cohort) and zero when aged 12 (i.e., pre-Reunification for both cohorts). "Treatment x Post" takes the value one, if the individual is in the young cohort and aged 14 (i.e. post-Reunification). All included terms are interacted with the dummy "Female". In Panel B, displays results from a placebo test that compares the change in outcomes of both cohorts in the pre-Reunification period to lend support to the parallel trend assumption.

Table 7: By Gender: Adjustment Process of Socioemotional Skills

	DID by year			
	Impulse Control		Self-Confidence	
	[1]	[2]	[3]	[4]
Treated Coh. x Post Reuni. x Female	0.081	-0.078	-0.119	-0.069
	[0.162]	[0.161]	[0.150]	[0.160]
Treated Cohort x Post Reunification	-0.278**	-0.221*	-0.193	-0.233*
	[0.127]	[0.117]	[0.121]	[0.120]
Treated Cohort (Young)	0.081		0.157*	
	[0.112]		[0.090]	
Treated Cohort x Female	0.012		0.004	
	[0.152]		[0.132]	
Post Reunification (Year 1991)	0.085	0.028	-0.073	-0.033
	[0.092]	[0.078]	[0.084]	[0.083]
Post Reunification x Female	-0.199*	-0.040	-0.170	-0.221*
	[0.102]	[0.100]	[0.111]	[0.123]
Female	0.126		-0.175*	
	[0.108]		[0.093]	
Constant	0.004	0.110***	0.149**	0.134***
	[0.072]	[0.018]	[0.063]	[0.023]
N Observations	1473	1473	1471	1471
N Individuals	825	825	825	825
N Schools	62	62	62	62
Individual FE	NO	YES	NO	YES
R-squared	0.013	0.038	0.053	0.097

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. The outcome variables are measures of socioemotional skills, namely Impulse control (in Columns (1) and (2)) and Self-Confidence (Columns (3) and (4)). "Treatment" takes value one (zero) if the individual is in the young (old) cohort. "Post" represents the individual's age. In Panel A, "Post" is a dummy variable that takes the value of one, if the individual is surveyed in year 1991 (this is age 17 the older cohort and age 14 for the younger cohort) and zero if the individual is surveyed in 1989 (i.e., age 15 for the older cohort and age 12 for the younger cohort). "Treatment x Post" takes the value one, if the individual is in the young cohort in 1991 (i.e. post-Reunification). All included terms are interacted with the dummy "Female".

Table 8: By Gender: Links to Long-run Behaviors

	Externalizing Behavior		Internalizing Behavior		Behav. Control Problems	
	[1]	[2]	[3]	[4]	[5]	[6]
Change in Socioemotional Skills						
Impulse Control	-0.145***	-0.333***	-0.015	-0.092*	-0.110***	-0.292***
	[0.051]	[0.108]	[0.039]	[0.054]	[0.037]	[0.064]
Impulse Control x Female		0.316***		0.136		0.307***
		[0.119]		[0.084]		[0.094]
Self-Confidence	-0.001	0.047	-0.085*	0.058	0.031	0.098
	[0.051]	[0.093]	[0.046]	[0.040]	[0.037]	[0.067]
Self-Confidence x Female		-0.083		-0.246***		-0.118
		[0.097]		[0.089]		[0.088]
Significance of total effect on female						
p-value for Impulse Control		0.720		0.458		0.776
p-value for Self-Confidence		0.411		0.016		0.699

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. Each column represents a separate regression for which the coefficient on the change in socioemotional skills are displayed, i.e., the change prior versus post-Reunification (which is between age 12 to 14 for the young cohort and between age 15 to 17 for the older cohort). As shown in Table 2 and Table 3, both socioemotional skill measures decrease in response to Reunification, so that the change in socioemotional skills is on average negative. Columns [1]/[2] report the effects of the socioemotional skills changes on externalizing behavior, which is an index based on the propensity to fight, destroy property, and to have trouble with the police. Columns [3]/[4] report the effects on an index for internalizing behavior based on (repeated) suicidal thoughts. Columns [5]/[6] report effects on behavioral control problems measured by an index capturing cigarette consumption and substance abuse (alcohol and drugs). All regressions control for the level of the relevant socioemotional skill measure at age 12 (i.e., prior to Reunification for both cohorts) and treatment assignment indicating whether the student belongs to the young cohort. All outcome variables are measured after Reunification, when students age aged 18 to 21. The full set of coefficients, including all included controls are displayed in Online Appendix Table A.4.

Table 9: By Gender: Links to Long-run Economic Outlook

	Optimism		Occupational Optimism		Employment Expectations	
	[1]	[2]	[3]	[4]	[5]	[6]
Change in Socioemotional Skills						
Impulse Control	0.010	0.014	-0.026	-0.031	-0.024	-0.018
	[0.022]	[0.035]	[0.041]	[0.060]	[0.048]	[0.064]
Impulse Control x Female		-0.008		-0.003		-0.021
		[0.048]		[0.088]		[0.079]
Self-Confidence	0.046**	0.043	0.038	0.062	0.035	0.065
	[0.021]	[0.030]	[0.052]	[0.074]	[0.048]	[0.064]
Self-Confidence x Female		0.007		-0.034		-0.042
		[0.038]		[0.101]		[0.081]
Significance of total effect on female						
p-value for Impulse Control		0.866		0.589		0.517
p-value for Self-Confidence		0.065		0.698		0.718

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. Each column represents a separate regression for which the coefficient on the change in socioemotional skills are displayed, i.e., the change prior versus post-Reunification (which is between age 12 to 14 for the young cohort and between age 15 to 17 for the older cohort). As shown in Table 2 and Table 3, both socioemotional skill measures decrease in response to Reunification, so that the change in socioemotional skills is on average negative. Columns [1]/[2] report effects on Optimism which indicates an optimistic view on one's future. Columns [3]/[4] reports effects on the satisfaction with one's expected occupational future. Columns [5]/[6] reports effects on expected employment chances. All regressions control for the level of the relevant socioemotional skill measure at age 12 (i.e., prior to Reunification for both cohorts) and treatment assignment indicating whether the student belongs to the young cohort. All outcome variables are measured after the reunification, when students age aged 18 to 21. The full set of coefficients, including all included controls are displayed in Online Appendix Table A.5.

ONLINE APPENDIX – For Online Publication

A. Tables

<div align="center">Table A.1: Comparison of Measures</div>

	Longitudinal Study of Students Germany 18-21 year olds 1995			**Youth Risk Behavior Surveillance** USA 18 year olds (12th grade) 1995		
	definition	female	male	definition	female	male
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	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[1]	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 used in the analysis.

Table A.2: Long-run Behaviors - full set of coefficients

	Externalizing Behavior		Internalizing Behavior		Behav. Control Problems	
	[1]	[2]	[3]	[4]	[5]	[6]
Change in Socioemotional Skills						
Impulse control	**-0.148***	**-0.046**	**-0.012**	**0.072**	**-0.112***	**-0.018**
	[0.053]	**[0.056]**	**[0.040]**	**[0.051]**	**[0.037]**	**[0.050]**
Impulse control x Treated		**-0.212***		**-0.199****		**-0.165****
		[0.110]		**[0.082]**		**[0.079]**
Self-Confidence	**0.030**	**0.014**	**-0.116****	**-0.010**	**0.039**	**0.010**
	[0.052]	**[0.048]**	**[0.046]**	**[0.054]**	**[0.037]**	**[0.061]**
Self-Confidence x Treated		**0.001**		**-0.213****		**0.063**
		[0.117]		**[0.090]**		**[0.076]**
Treated Cohort (Young)	0.208***	0.210***	0.154*	0.151*	-0.104	-0.091
	[0.078]	[0.078]	[0.084]	[0.079]	[0.086]	[0.087]
Impulse control (age 12)	-0.117**	-0.056	-0.095**	-0.000	-0.174***	-0.185***
	[0.045]	[0.052]	[0.045]	[0.053]	[0.045]	[0.055]
Impulse control (age 12) x Treated		-0.172*		-0.237**		-0.011
		[0.098]		[0.091]		[0.097]
Self-Confidence (age 12)	0.001	0.057	-0.112**	-0.115	0.008	0.009
	[0.037]	[0.035]	[0.048]	[0.072]	[0.040]	[0.056]
Self-Confidence (age 12) x Treated		-0.092		-0.034		0.026
		[0.093]		[0.102]		[0.084]
Constant	-0.112***	-0.120***	-0.095	-0.111**	0.063	0.048
	[0.040]	[0.039]	[0.060]	[0.054]	[0.059]	[0.058]
N Observations	656	656	656	656	656	656
N Individuals	656	656	656	656	656	656
N Schools	62	62	62	62	62	62
R-squared	0.033	0.045	0.033	0.057	0.030	0.035

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. Each column represents a separate regression for which the coefficient on the change in socioemotional skills are displayed, i.e., the change prior versus post-Reunification (which is between age 12 to 14 for the young cohort and between age 15 to 17 for the older cohort). As shown in Table 2 and Table 3, both socioemotional skill measures decrease in response to Reunification, so that the change in socioemotional skills is on average negative. Columns [1]/[2] report the effects of the socioemotional skills changes on externalizing behavior, which is an index based on the propensity to fight, destroy property, and to have trouble with the police. Columns [3]/[4] report the effects on an index for internalizing behavior based on (repeated) suicidal thoughts. Columns [5]/[6] report effects on behavioral control problems measured by an index capturing cigarette consumption and substance abuse (alcohol and drugs). All regressions control for the level of the relevant socioemotional skill measure at age 12 (i.e., prior to Reunification for both cohorts) and for treatment assignment indicating whether the student belongs to the young cohort. All outcome variables are measured after Reunification, when students are aged 18 to 21.

Table A.3: Long-run Economic Outlook -full set of coefficients

	Optimism		Occupational Optimism		Employment Expectations	
	[1]	[2]	[3]	[4]	[5]	[6]
Change in Socioemotional Skills						
Impulse control	**0.012**	**-0.014**	**-0.030**	**-0.056**	**-0.026**	**0.010**
	[0.022]	**[0.037]**	**[0.039]**	**[0.071]**	**[0.047]**	**[0.094]**
Impulse control x Treated		**0.042**		**0.054**		**-0.073**
		[0.048]		**[0.090]**		**[0.108]**
Self-Confidence	**0.059*** **	**0.005**	**0.052**	**-0.094**	**0.066**	**-0.043**
	[0.021]	**[0.026]**	**[0.054]**	**[0.068]**	**[0.049]**	**[0.080]**
Self-Confidence x Treated		**0.118*** **		**0.281*** **		**0.217** **
		[0.040]		**[0.098]**		**[0.099]**
Treated Cohort (Young)	-0.123***	-0.121***	-0.199**	-0.195**	-0.257***	-0.250***
	[0.041]	[0.041]	[0.076]	[0.079]	[0.075]	[0.076]
Impulse control (age 12)	0.030	0.026	-0.004	-0.032	-0.039	-0.035
	[0.020]	[0.030]	[0.037]	[0.060]	[0.041]	[0.056]
Impulse control (age 12) x Treated		0.013		0.064		-0.028
		[0.041]		[0.078]		[0.082]
Self-Confidence (age 12)	0.053**	0.035	0.095**	0.110*	0.071	0.078
	[0.023]	[0.034]	[0.038]	[0.060]	[0.046]	[0.065]
Self-Confidence (age 12) x Treated		0.064		0.039		0.049
		[0.049]		[0.083]		[0.099]
Constant	0.672***	0.678***	0.167***	0.181***	0.170***	0.173***
	[0.023]	[0.022]	[0.045]	[0.049]	[0.051]	[0.053]
N Observations	673	673	673	673	673	673
N Individuals	673	673	673	673	673	673
N Schools	62	62	62	62	62	62
R-squared	0.039	0.053	0.019	0.036	0.023	0.033

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. Each column represents a separate regression for which the coefficient on the change in socioemotional skills are displayed, i.e., the change prior versus post-Reunification (which is between age 12 to 14 for the young cohort and between age 15 to 17 for the older cohort). As shown in Table 2 and Table 3, both socioemotional skill measures decrease in response to Reunification, so that the change in socioemotional skills is on average negative. Columns [1]/[2] report effects on Optimism which indicates an optimistic view on one's future. Columns [3]/[4] reports effects on the satisfaction with one's expected occupational future. Columns [5]/[6] reports effects on expected employment chances. All regressions control for the level of the relevant socioemotional skill measure at age 12 (i.e., prior to Reunification for both cohorts) and for treatment assignment indicating whether the student belongs to the young cohort. All outcome variables are measured after the reunification, when students age aged 18 to 21.

Table A.4: By Gender: Links to Long-run Behaviors - full set of coefficients

	Externalizing Behavior		Internalizing Behavior		Behav. Control Problems	
	[1]	[2]	[3]	[4]	[5]	[6]
Change in Socioemotional Skills						
Impulse control	-0.145***	-0.333***	-0.015	-0.092*	-0.110***	-0.292***
	[0.051]	[0.108]	[0.039]	[0.054]	[0.037]	[0.064]
Impulse control x Female		0.316***		0.136		0.307***
		[0.119]		[0.084]		[0.094]
Self-Confidence	-0.001	0.047	-0.085*	0.058	0.031	0.098
	[0.051]	[0.093]	[0.046]	[0.040]	[0.037]	[0.067]
Self-Confidence x Female		-0.083		-0.246***		-0.118
		[0.097]		[0.089]		[0.088]
Treated Cohort (Young)	0.305**	0.287*	-0.066	-0.068	-0.135	-0.151
	[0.145]	[0.147]	[0.101]	[0.101]	[0.136]	[0.136]
Female	-0.248**	-0.275**	0.129	0.125	-0.122	-0.145
	[0.109]	[0.114]	[0.094]	[0.096]	[0.149]	[0.147]
Treated x Female	-0.197	-0.156	0.413***	0.413***	0.048	0.081
	[0.148]	[0.151]	[0.134]	[0.137]	[0.186]	[0.184]
Impulse control (age 12)	-0.096**	-0.246**	-0.114**	-0.128**	-0.168***	-0.308***
	[0.044]	[0.104]	[0.044]	[0.059]	[0.045]	[0.068]
Impulse control (age 12) x Female		0.249**		0.011		0.231**
		[0.107]		[0.098]		[0.088]
Self-Confidence (age 12)	-0.032	0.002	-0.079*	0.037	-0.001	0.035
	[0.037]	[0.082]	[0.045]	[0.044]	[0.042]	[0.068]
Self-Confidence (age 12) x Female		-0.047		-0.178**		-0.051
		[0.090]		[0.084]		[0.096]
Constant	0.033	0.034	-0.170**	-0.186**	0.134	0.132
	[0.096]	[0.101]	[0.084]	[0.082]	[0.096]	[0.096]
N Observations	656	656	656	656	656	656
N Individuals	656	656	656	656	656	656
N Schools	62	62	62	62	62	62
R-squared	0.064	0.086	0.074	0.090	0.032	0.053

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. Each column represents a separate regression for which the coefficient on the change in socioemotional skills are displayed, i.e., the change prior versus post-Reunification (which is between age 12 to 14 for the young cohort and between age 15 to 17 for the older cohort). As shown in Table 2 and Table 3, both socioemotional skill measures decrease in response to Reunification, so that the change in socioemotional skills is on average negative. Columns [1]/[2] report the effects of the socioemotional skills changes on externalizing behavior, which is an index based on the propensity to fight, destroy property, and to have trouble with the police. Columns [3]/[4] report the effects on an index for internalizing behavior based on (repeated) suicidal thoughts. Columns [5]/[6] report effects on behavioral control problems measured by an index capturing cigarette consumption and substance abuse (alcohol and drugs). All regressions control for the level of the relevant socioemotional skill measure at age 12 (i.e., prior to Reunification for both cohorts) and treatment assignment indicating whether the student belongs to the young cohort. All outcome variables are measured after Reunification, when students are aged 18 to 21. All included terms are interacted with a dummy for being Female.

Table A.5: By Gender: Links to Long-run Economic Outlook - full set of coefficients

	Optimism		Occupational Optimism		Employment Expectations	
	[1]	[2]	[3]	[4]	[5]	[6]
Change in Socioemotional Skills						
Impulse control	**0.012**	**0.013**	**-0.030**	**-0.030**	**-0.025**	**-0.018**
	[0.022]	**[0.035]**	**[0.040]**	**[0.060]**	**[0.048]**	**[0.064]**
Impulse control x Female		**-0.004**		**-0.009**		**-0.023**
		[0.048]		**[0.087]**		**[0.079]**
Self-Confidence	**0.047****	**0.043**	**0.034**	**0.063**	**0.041**	**0.065**
	[0.021]	**[0.030]**	**[0.052]**	**[0.074]**	**[0.048]**	**[0.064]**
Self-Confidence x Female		**0.010**		**-0.041**		**-0.031**
		[0.038]		**[0.101]**		**[0.081]**
Treated Cohort (Young)	-0.123**	-0.123**	-0.155	-0.150	-0.195*	-0.192*
	[0.050]	[0.049]	[0.105]	[0.104]	[0.103]	[0.100]
Female	-0.143***	-0.142***	-0.155	-0.144	-0.226	-0.216
	[0.041]	[0.040]	[0.117]	[0.119]	[0.149]	[0.145]
Treated x Female	-0.009	-0.008	-0.092	-0.102	-0.131	-0.137
	[0.073]	[0.074]	[0.153]	[0.151]	[0.173]	[0.169]
Impulse control (age 12)	0.037*	0.021	0.006	-0.077	-0.024	-0.100**
	[0.020]	[0.032]	[0.037]	[0.054]	[0.040]	[0.048]
Impulse control (age 12) x Female		0.029		0.148**		0.135*
		[0.035]		[0.071]		[0.072]
Self-Confidence (age 12)	0.041*	0.054*	0.077*	0.144***	0.045	0.130**
	[0.022]	[0.031]	[0.039]	[0.053]	[0.044]	[0.054]
Self-Confidence (age 12) x Female		-0.022		-0.107		-0.138*
		[0.039]		[0.076]		[0.083]
Constant	0.754***	0.751***	0.256***	0.238***	0.300***	0.281***
	[0.031]	[0.030]	[0.079]	[0.080]	[0.077]	[0.076]
N Observations	673	673	673	673	673	673
N Individuals	673	673	673	673	673	673
N Schools	62	62	62	62	62	62
R-squared	0.060	0.061	0.030	0.036	0.046	0.053

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. Each column represents a separate regression for which the coefficient on the change in socioemotional skills are displayed, i.e., the change prior versus post-Reunification (which is between age 12 to 14 for the young cohort and between age 15 to 17 for the older cohort). As shown in Table 2 and Table 3, both socioemotional skill measures decrease in response to Reunification, so that the change in socioemotional skills is on average negative. Columns [1]/[2] report effects on Optimism which indicates an optimistic view on one's future. Columns [3]/[4] reports effects on the satisfaction with one's expected occupational future. Columns [5]/[6] reports effects on expected employment chances. All regressions control for the level of the relevant socioemotional skill measure at age 12 (i.e., prior to Reunification for both cohorts) and treatment assignment indicating whether the student belongs to the young cohort. All outcome variables are measured after the reunification, when students are aged 18 to 21. All included terms are interacted with a dummy for being Female.

Table A.6: Effect of Reunification on Cognitive Skills - full set of coefficients

	Cognitives			
	Panel A:		**Panel B:**	
	Main results		Placebo-Tests	
	[1]	[2]	[3]	[4]
Treated Cohort x Post Reunification	-0.053	-0.053	0.016	0.011
	[0.060]	[0.060]	[0.046]	[0.040]
Treated Cohort (Young)	0.042		0.043	
	[0.084]		[0.083]	
Post Reunification (Age 14)	0.115***	0.115***	0.171***	0.193***
	[0.030]	[0.030]	[0.028]	[0.022]
Constant	-0.063	-0.047***	-0.108**	-0.102***
	[0.045]	[0.014]	[0.047]	[0.010]
N Observations	1504	1504	1456	1456
N Individuals	752	752	752	752
N Schools	62	62	62	62
Individual FE	NO	YES	NO	YES
R-squared	0.002	0.032	0.008	0.145

Notes: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. Standard errors clustered at school level are displayed in brackets. The outcome variable is an indicator of cognitive skills. "Treatment" takes value one (zero) if the individual is in the young (old) cohort. "Post" represents the individual's age. In Panel A, "Post" is a dummy variable that takes the value of one, if the age of the individual is 14 (this is pre-Reunification for the older cohort and post-Reunification for the younger cohort) and zero when aged 12 (i.e., pre-Reunification for both cohorts). "Treatment x Post" takes the value one, if the individual is in the young cohort and aged 14 (i.e. post-Reunification). In Panel B, displays results from a placebo test that compares the change in outcomes of both cohorts in the pre-Reunification period to lend support to the parallel trend assumption.