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# A Different Look at Lenin's Legacy: Social Capital and Risk Taking in the Two Germanies

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# A Different Look at Lenin's Legacy: Social Capital and Risk Taking in the Two Germanies

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**Abstract**

What are the long-term effects of Communism on economically relevant notions such as social trust, fairness, and scope of cooperation? To answer this question, we study the post-unification trajectory of convergence between East and West German individuals with regard to trust, cooperation, and risk. Our hypotheses are derived from a model of German unification that incorporates individual responses both to incentives and to values inherited from earlier generations as recently suggested in the literature. Using two waves of balanced panel data, we find that despite twenty years of unification East Germans are still characterized by a persistent level of social distrust. In comparison to West Germans, they are less inclined to see others as cooperative. East Germans are also found to have been more risk loving than West Germans. However, risk attitudes fully converged recently.

JEL classification: P51, Z13

Keywords: Social trust; Risk Attitudes; Political Regimes; German Unification

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# 1 Introduction

On August 13th 1961, more or less random historical circumstances led to the building of the Berlin Wall, dividing Germany for four decades into two separate countries. Five decades after this historic event and two decades after the other even more unexpected historic break, German unificiation, the question is not only whether the period of division (1961-1990) has effects lasting to the present but also whether it is possible to identify *why* it has long-term effects. Today, the first part of this question is a stylized fact: According to Boltho *et al.* (1997), East German GDP per capita amounted to 120 percent of West German GDP per capita before 1936. It fell back to 60 percent between 1948 and the peaceful revolution of 1989. The share dropped to its post-war all-time low of 31 percent in 1991. After a steady rise following unification, it stagnates at a level of roughly 65 percent since the second half of the 1990s. Less "hard data" based series on happiness or life satisfaction show very similar patterns (Frijters *et al.* 2004a, 2004b). A seminal study combining life satisfaction and economic conditions in the context of German unification is Easterlin and Plagnol (2008).

Yet, to explain the hitherto realized result of limited convergence is an open issue. Potential channels include institutions, culture, knowledge and technology, and movements between multiple equilibria. For a general overview of channels of path dependency see Putnam (1993) and Nunn (2009).[1] In this study, we make an attempt to empirically identify long-term cultural discrepancies in economically relevant notions resulting from the division of Germany and to assess their explanatory potential for limited social convergence. The latter is done by giving the generational passing of cultural traits model by Tabellini (2008a) a new dimension by extending it to a two societies convergence scenario.

[1] Putnam (1993) sees three main routes of explanation for the prevailing North-South dichotomy in modern Italy: institutional design, socioeconomic determinants, and sociocultural factors. Empirically, he rules out the first two channels and finds differences in "social capital" at the heart of the economic and political gap: The nothern way of life installed since about 1,000 AD nurtured a system of cooperation and trust that grew into strong civic-mindedness. In contrast, the oppressive nature of Norman rule and the catholic church kept citizens of the South in a state of dependence which led to a widespread social feeling of distrust.

Our study contributes to a recently established strand of mostly empirical literature (Alesina and Fuchs-Schündeln 2007, Brosig-Koch *et al.* 2011, Buch and Toubal 2009, Burchardi and Hassan 2011, Burda 2006, Fuchs-Schündeln and Izem 2012, Redding and Sturm 2008, Süssmuth *et al.* 2010, Uhlig 2006)[2] that addresses the long-lasting effects of Communism on economically relevant notions twenty years after the collapse of the Soviet system. More than two decades after the fall of the wall it is now possible to study economic behavior of individuals who spent most of their childhood in unified Germany. We focus on the persistence of gaps in "deep parameters" (i.e. factors relevant for social capital formation) that has recently gained increasing attention in the literature (Brosig-Koch *et al.* 2011, Burchardi and Hassan 2011). Our empirical strategy widely follows Alesina and Fuchs-Schündeln (2007) who analyze individuals' policy preferences such as attitudes towards income redistribution or pro-state provision of services that could as well be provided by private forces. In the context of German unification, Rainer and Siedler (2009) is the first study to investigate trust which has been shown to impact on a variety of economic outcomes (Knack and Keefer 1997, Alesina and La Ferrara 2002, Slemrod and Katuscak 2005). Their findings suggest that some ten years after unification, East Germans still have the same levels of social distrust as shortly after the fall of the wall. However, Rainer and Siedler (2009) is a cross-sectional study, implying that all information about dynamic dependence in behavior, which is particularly important in the political transition context stressing inertia and persistence, is lost. Balanced panel data like the ones that we are mainly relying on here are required to identify the dependence between past and current behavior by tracking subjects (Cameron and Trivedi 2005). Our contribution in this regard, that is, to the "persistent gap" hypothesis, lies in combining the approved empirical strategy by Alesina and Fuchs-Schündeln (2007) with the idea of Rainer and Siedler (2009) to examine whether the democratic experience of East Germans leads to an erosion of distrust. Beyond that, we analyze how inert this process actually is in translating into enhanced cooperativeness. Another fundamental notion that is sometimes seen as prerequisite for trust and altruistic cooperation is

[2]While Redding and Sturm (2008) rely on the division of Germany as central source of exogenous variation, our focus is on German unification and re-integration.

fairness. At the individual level, it has for example been shown that selfish or greedy intentions destroy altruistic cooperation almost completely, whereas sanctions perceived as fair leave altruism intact (Fehr and Rockenbach 2003). By now, there are only very few studies that empirically study fairness at the societal level (see, e.g., Zak and Fakhar 2005). To our knowledge, none of them analyzes the notion of fairness in the context of the German unification process.

We add to this literature (i) by examining the East-West trust gradient for the first time using panel data from the German Socio-Economic Panel, which allows accounting for intra-personal correlation over time, (ii) by analyzing the effects on individuals' risk attitudes and their persistence as well as (iii) by studying the differences in the perception of others being fair and helpful and their persistence over time. Some basic hypotheses are derived from a model of German unification that incorporates individual responses both to incentives and to values inherited from earlier generations as recently suggested by Tabellini (2008a).

Our results indicate that despite almost twenty years of unification, East Germans show a lower level of social trust, which is only slowly converging to the West German level in the second decade of the unification process. This finding is in line with predictions from our unification extension of Tabellini (2008a), and it holds controlling for a wide range of socio-demographic and contextual characteristics as well as across various estimation approaches. In contrast, West Germans show a quantitatively small downward tendency in terms of broadly measured social trust amounting to about one fifth of the significant East-West gap in the second decade of the unification process. With regard to testing the model synthesizing incentives and inherited value systems, these results lend support to the passing of cultural traits across generations and for cooperation being sustained by values and reputation. Extrapolating our results, full convergence in social trust will take approximately one more decade. For fairness and cooperativeness, we find (yet) no statistically significant trajectory of convergence to extrapolate.

Contrary to common belief, we also find East Germans to have been more risk loving than their West German counterparts at the beginning of the last decade which again

holds for an ample range of robustness checks. In contrast to trust, fairness, and cooperativeness, however, risk attitudes clearly fully converged in the "Two Germanies" to the more risk averse attitude prevalent among West German individuals.

Finally, we use a counterfactual placebo effects strategy to show that our findings are not resulting from differences in mentality or local environments but are a product from socialization due to the Communist system.

The rest of the paper is organized as follows. Section 2 gives an account of the historical background and summarizes the existing literature on trust and cooperation, fairness and value systems and how these notions relate to a political system in place. The final part of Section 2 presents our German unification extension of the model by Tabellini (2008a). Section 3 analogously reviews the literature and some theoretical considerations on risk taking in different political systems and in times of transition. Empirical evidence is reported and discussed in Section 4. Finally, Section 5 concludes.

## 2 Trust and cooperation: literature and some theory

In the aftermath of World War II, a population of 19.1 million lived in the Soviet zone that officially became the German Democratic Republic (GDR) in 1949. About one sixth of these individuals emigrated into the Federal Republic of Germany (FRG) before the Berlin Wall was built.[3] In the following decades the Socialist Unity Party (*Sozialistische Einheitspartei Deutschland* – SED) established a repressive one-party communist system that lasted until the peaceful revolution of 1989 and official unification in 1990. Confined by the Iron Curtain only about 600,000 people emigrated from East to West by 1988. The total of 3.6 million East-West migrants contrast with about 300,000 people emigrating from West to East in the 1950s, and almost no West-East migration after 1961.

[3]For sources of migration figures see Alesina and Fuchs-Schündeln (2007, p. 1510). Another concise historical background of the division of Germany, highlighting the implied cut through regions of prewar Germany that had been integrated through several centuries, can be found in Redding and Sturm (2008, pp. 1770-1771). It also gives an account of the sparse migration flows between East and West Germany after the division of Germany.

Since unification former GDR residents have experienced life in a market-based democracy that FRG residents experienced since 1945. During the division period West Germany was populated by about 250 inhabitants per square kilometer with a share of foreign nationals of approximately 6-10 percent. Immigrants to the FRG originated from a range of countries with diverse cultural backgrounds. The majority of them were guest workers immigrating from Turkey, followed by former Yugoslavia, Italy, and Greece. In contrast, the population density in the GDR was roughly 150 inhabitants per square kilometer with a Slavonic minority of 40-60 thousand Sorbians and a negligible share of foreign nationals.

About 25 percent of the current German population has been born and grown up in the GDR. These individuals experienced one of the most rigid regimes of the former communist block. East Germans were governed by a communist regime that severely and systematically violated the basic rights of its citizens over several decades. The sparse freedom that people had was further undermined by the GDR's Ministry of State Security's (*Ministerium für Staatssicherheit* – MfS) secret service *Staatssicherheit* alias "Stasi." Rainer and Siedler (2009, pp. 251-252) quantify the societal infiltration and climate of mistrust in the following way referring to Koehler (1999) as central source for figures: "The Stasi kept files on an estimated six million people, and built up a network of civilian informants ('unofficial collaborators'), who monitored politically incorrect behavior among other citizens. By 1995, 174,000 East Germans had been identified as unofficial collaborators. This amounts to 2.5 percent of the total population and constitutes one of the highest penetrations of any society by a security apparatus. In fact, the ratio of 'watchers' to 'watched' was even higher than (i.e. roughly 90-times) that of the Soviet Union under communism." Other sources document an even higher penetration of society with a total of 600,000 MfS collaborators, implying on average, at least, one Stasi collaborator in every random sample of 50 citizens (Citizens' Committee 2010). The GDR system habitually imposed unfair moral choices: for example, denounce your neighbor or colleague, or your child will never go to university. It preached altruism but ingrained selfishness. Obviously, in the words of Tabellini (2008b, p. 909) there is a his-

tory of political abuse and exploitation from which citizens of the former GDR suffered, possibly echoing to the present day. The central open question therefore is whether or by how much after two decades, i.e., after one generation having grown up in a free and law-governed society, restoration of public-spiritedness, decency, and trust is completed.

Before setting up a model of trust and cooperation in the context of German unification, we will briefly sketch the existing literature as it relates to the relationship between political system and the notions of social trust, fairness, and scope of cooperation.

## 2.1 Political system and social trust

In a recent paper, Nunn and Wantchekon (2011) document the high persistency of mistrust among black Africans whose ancestors were heavily raided during the slave trade. To capture a causal effect the authors use historic proximity of ancestors to the coast of the Indian ocean and the Pacific ocean to instrument slave trade intensity. They find that even 100 years after the end of the slave trade period, the system left its traces in terms of an eroded level of social trust. Of course, we would not expect such a secular persistency of mistrust in the aftermath of the GDR system given that the slave trade period lasted for about four centuries, depriving colored individuals from basically all human rights, while the repressive surveillance-based system of the GDR existed for four decades.

When it comes to comparing West and East German individuals, we would rather expect similar or even more pronounced evidence of a gap in social trust as reported in Tabellini (2008b) who finds that trust of second-generation U.S. citizens is higher if they came from countries that over a century ago had the better political institutions. Based on data from repeated cross-sections Rainer and Siedler (2009) find some first indications for this hypothesis to hold for the first decade after Germany's unification, that is, for the early transition period of East Germany from a communist regime to a market-based democracy. However, to measure the (inherited) persistency of mistrust and a potential convergence of trust levels in the post-transition period, the use of panel

data is a necessity. It shoud be noted that our data also allow us to control for individual labor market experiences in an effort to isolate socialization effects from effects induced by suffering from dramatic labor market shocks and high levels of economic insecurity.

## 2.2 Political system, fairness and value systems

Fehr and Rockenbach (2003) argue that fairness is prior to trust inasmuch as social trust might be seen as the outcome of a (repeated) experience of fairness and cooperativeness. *One* political system generates behavior of repeated fairness and cooperation. This behavior "breeds" trustworthiness which, in turn, leads to mutually trusting individuals. *Another* political system might directly impair society and "infect" it through governmentally induced non-trustworthy (individual) behavior, leading to mutually mistrusting individuals. This literature questions the dominant role and universality of self-interest and the implication that welfare enhancing cooperation is doomed to fail unless well defined small groups interact indefinitely (Gächter *et al.* 2010). See also Fehr and Schmidt (2006) for a recent survey of the related theoretical literature. Yet there are only a few studies that empirically study fairness at the societal level (see, e.g., Zak and Fakhar 2005). To our knowledge, none of them analyzes the notion of fairness in the context of German unification.

A political system, in particular, in its polar form of a collectivist (GDR) or individualist (FRG) society, shapes through, among others, markets and economic institutions the cultural and socio-economic background of a society (Greif 1994, Bowles 1998). Fairness as a dominant behavioral force is found to be determined by this type of background (Guiso *et al.* 2006, Fernández 2007, Tabellini 2008b). The socio-economic background of a society in turn is identified in the literature as those sets of beliefs and values that the majority of people in a society hold and that get "transmitted fairly unchanged from generation to generation" (Guiso *et al.* 2006, p. 23). Since the "evolution of value systems is determined by initial and possibly random historical circumstances" (Tabellini 2008a, p. 909) and since the division of Germany in terms of actual borders implied quite some

random element as documented, for example, in Redding and Sturm (2007), the German unification process is a most interesting historical incidence with quasi-experimental character to study in this context.

## 2.3 Theoretical model of trust and cooperation

Recently, Tabellini (2008a) proposed a model of trust and cooperation that discriminates two types of players. Players $k = 0, 1$ differ in the rate at which a warm glow effect (Andreoni 1990) from mutually playing the cooperation strategy in a modified prisoner's dilemma decays with distance. The latter refers to distance in a matching game, where individuals located on a Hotelling's circle are randomly matched to play the game. Their locational differences represent dimensions such as geography, religion, ethnicity, ideology, and class. A fast decay of the warm glow is given for not-trustworthy ($k = 0$), a slow decay for trustworthy individuals ($k = 1$). In the case of a fixed and exogenous fraction of trustworthy individuals $n$, the upper threshold of cooperation for a trustworthy player $Y^1$ can be shown to increase with $n$ until $Y^1 \geq Y^0$. The increasing effect of $n$ on $Y^1$ reflects the strategic complementarity in the prisoner's dilemma game. Individuals are more willing to cooperate the higher is the probability that their partner will also cooperate. With regard to a communist system, this strategic complementarity can be interpreted in the following way: If a system succeeds in raising the number of individuals $1-n$ who are true to its principles, it simultaneously fosters the collectivistic attitude of people who are already blindly loyal to the system. A decreasing cooperativeness with increasing $1-n$ generally is a central testable implication: The share of not-trustworthy individuals $1-n$ in a society can be exogenously increased by a repressive political regime. In the context of Germany's division, this clearly was the case in the GDR, due to every day life infiltrating activities of Stasi (secret state's police) collaborators and the hiring and networking of civilian informants.

Endogenizing $n$ is achieved by modeling how parents rationally choose what values to transmit to their children dependent on economic incentives as well as other features

of the environment. Whether a given individual is of type $k = 0$ or 1 is due to either "nature or nurture," where the latter is determined by the external environment and/or the parental education effort. Parents are altruistic and care about the utility of their offspring, but evaluate their kids' expected welfare with their own preferences. This assumption of "imperfect empathy" (Tabellini 2008a, p. 916) implies that some parents devote effort to try and shape the values of their children to resemble their own. Consider an infinite economy, where agents live two periods. In the first period, they get educated by their parents. After completion of education, agents become themselves players in the game described above. In the second period, each individual is the parent of a single kid and the parent's only activity is to educate the respective offspring. Parental education increases the probability that the kid becomes trustworthy ($\theta^k = \theta^1$), but is costly for the parent. Educational effort $f$ is chosen by each parent before observing a kid's type of value system. The probability of having a trustworthy kid does not depend on the parent's type. The impact of "nature and nurture" is denoted by $\delta$ and $f$, respectively. Given effort $f \geq 0$, the kid turns out to be trustworthy ($\theta^k = \theta^1$) with probability $\delta + f$, and unreliable ($\theta^k = \theta^0$) with probability $1 - (\delta + f)$, where $1 > \delta > 0$.

The fraction of trustworthy players in each period, $n_t$, evolves endogenously over time according to the following fundamental law of motion

$$n_t = n_{t-1}(\delta + f_t) + (1 - n_{t-1})\delta = \delta + n_{t-1}f_t, \tag{1}$$

where $f_t$ now exclusively denotes effort by a trustworthy parent. If parents exert no effort, the average fraction of trustworthy kids in the population equals $\delta$. In period $t$, the fraction of trustworthy parents $n_{t-1}$ exerts educational effort $f_t$, which in turn increases the fraction of trustworthy kids in the population by $n_{t-1}f_t$ on average. The parents' optimal choice of educational effort implies $f_t > 0$. Recalling $\delta + f_t$ is denoting a probability, it follows that $1 - \delta \geq f_t$. Furthermore, $f_t$ can be shown to be a known function $f_t = F(Y_t^1)$ that is strictly increasing in $Y_t^1$. This implies a second strategic complementarity. If parents expect others to put more effort into education, they anticipate that the fraction of trustworthy players will increase. They realize that this will expand the scope of cooperation $Y_t^1$ and increase educational effort. This central feature of the model produces a

certain inertia: A high starting level of trustworthiness in a society ($n_0$) can be sustained just as well as a low starting level for several generations. The educational game behind is supermodular (Tabellini 2008a, pp. 921-922). Let an equilibrium vector be given by $(Y_t^{1*}, n_t^*)$. As $Y_t^1$ increases, trustworthy parents are induced to put more effort into changing their kid's values due to the second strategic complementarity in the model. Hence, $n_t$ is an increasing function both in $Y_t^1$ and $n_{t-1}$, i.e., $n_t = N\left(Y_t^1, n_{t-1}\right)$ is also increasing in $Y_t^1$. Setting $n_t = n_{t-1} = n_s$, a steady state is given by

$$Y_s^{1*} = Y\left(n_s^*\right) \tag{2}$$

$$n_s^* = \frac{\delta}{1 - F\left(Y_s^{1*}\right)}. \tag{3}$$

We can derive the following central testable implications that we will elaborate in more detail in the context of German unification:

- Individuals are more willing to cooperate the higher is the probability that their partner will also cooperate. The scope of cooperation $Y_t^1$ is increasing in $n_t$ and decreasing in $(1 - n_t)$, that is, in the share of trustworthy and not-trustworthy individuals, respectively (first strategic complementarity).

- If the first implication is found to hold, the equilibrium asymptotically reaches a steady state $(Y^{1*}, n^*)$.

- If the first two implications are found to hold, then there is an adjustment to the steady state, during which $Y_t^1$ and $n_t$ move in the same direction. The adjustment is not abrupt. There is inertia in $n$. It takes $> 1$ generation until a new steady state is reached (second strategic complementarity).

Consider two societies, East ($E$) and West ($W$), that developed a scope of cooperation over several decades independently of each other according to the model skteched above, i.e., $\left(Y^{1*^E}, n^{*^E}\right)$ and $\left(Y^{1*^W}, n^{*^W}\right)$.[4] The respective steady states are depicted as the two points of intersection in Figure 1. Obviously and intuitively, $n^{*^W} > n^{*^E}$, due to the above

[4]The independent development at the individual level implies that, before unification, East Germans are randomly matched to each other in the underlying matching game. On the other

discussed repressive nature of the GDR (denoted by superscript $E$), a police state, where citizens were not only surveilled and scrutinized but also controlled by the underlings of the regime recruited from fellow citizens. That is, the share of trustworthy persons in $W$ is higher than the one in society $E$. Next, consider fundamental equation (1) for a consecutive sequence of periods (i.e., generations), where reunification happens to take place in $t$, $\delta \in (0,1)$, $1-\delta \geq f$ due to the fact that $\delta + f$ represents a probability, $I^j$ for $j = W, E$ denotes inhabitants in East and West, and $R$ denotes re-unified Germany:

$$
\begin{aligned}
t\text{:} \quad & n_t^E && = n_{t-1}^E \left(\delta + f_t\right) + \left(1 - n_{t-1}^E\right) \delta = \delta + n_{t-1}^E f_t \\
t+1\text{:} \quad & n_{t+1}^R && = \delta + \tfrac{1}{I^W + I^E} \left(I^E n_t^E + I^W n_t^W\right) f_{t+1} \\
& && = \delta + \tfrac{1}{I^W + I^E} \left[I^E \left(\delta + n_{t-1}^E f_t\right) + I^W n_t^W\right] f_{t+1} \\
t+2\text{:} \quad & n_{t+2}^R && = \delta + n_{t+1}^R f_{t+2} \\
& && = \delta + \left\{\delta + \tfrac{1}{I^W + I^E} \left[I^E \left(\delta + n_{t-1}^E f_t\right) + I^W n_t^W\right] f_{t+1}\right\} f_{t+2} \\
t+3\text{:} \quad & n_{t+3}^R && = \delta + n_{t+2}^R f_{t+3} \\
& && = \ldots
\end{aligned}
$$

Clearly, $n_{t-1}^E$, i.e., the share of trustworthy individuals in the former GDR has a sustained impact on the share of trustworthy individuals even several generations after reunification. However, this impact has a decaying weight due to $f < 1$. In the period of reunification, the East German society moves out of its original steady state due to the exogenous decrease in the overall fraction of not-trustworthy fellow citizens. This induces a second round effect as East German parents now expect other East German parents to put more effort into educating a trustworthy offspring. They anticipate that due to this effect the fraction of trustworthy players will further increase and they realize that this will expand the scope of cooperation $Y_t^{1E}$. By increasing, both $n^E$ and $Y^{1E}$ move in the same direction towards the West German steady state levels $\left(Y^{1*^W}, n^{*^W}\right)$. This is shown in Figure 1. Whether the transition to the new steady state is smooth or perturbed, as suggested, for example, in Süssmuth *et al.* (2010), is unclear as indicated by the dashed

hand, West Germans are themselves separately matched to each other. After unification, the two separate Hotelling's circles merge into one and individuals –independently of being of East or West background– get randomly matched.

line arrows. If we apply the model symmetrically to West German parents and kids and follow the same argumentation as above with opposite signs, a self-reinforcing downward spiral is triggered because of the second strategic complementarity.

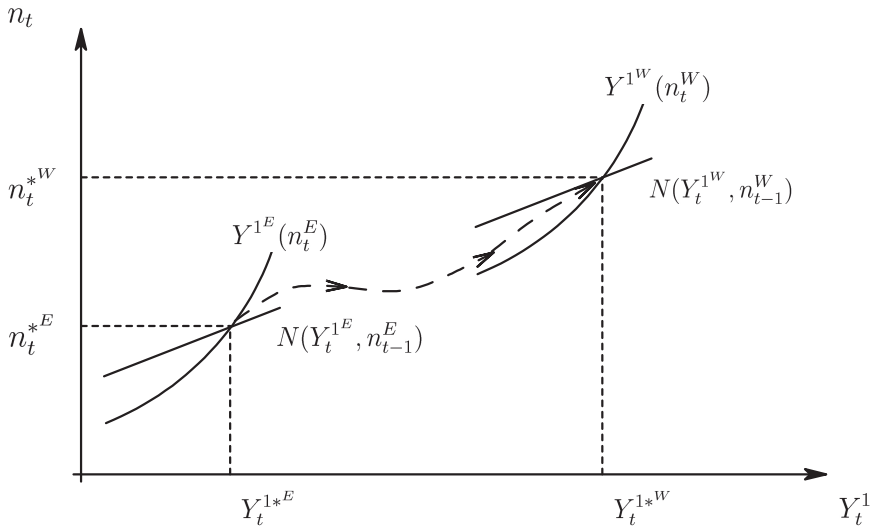


Figure 1. Trajectory of convergence into new equilibrium I

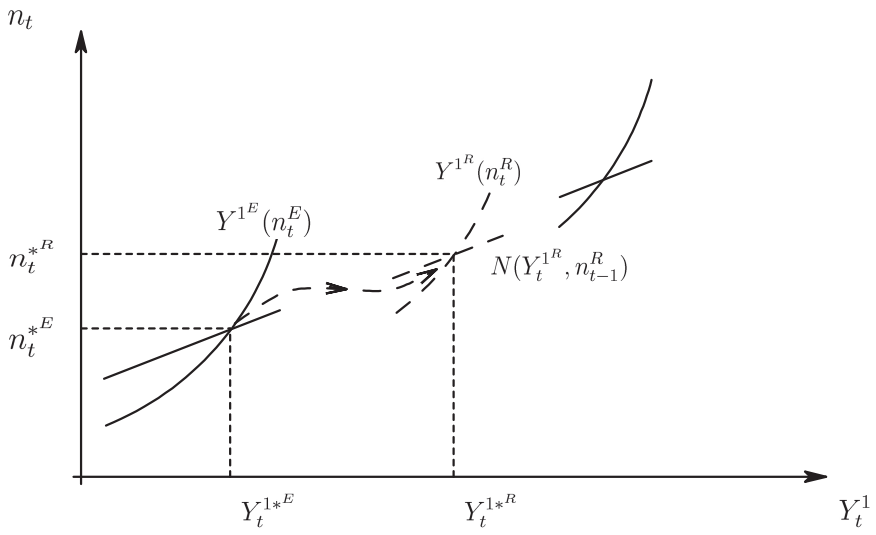


Figure 2. Trajectory of convergence into new equilibrium II

However, as $I^W > I^E$, the downward movement of the West German steady state level towards a steady state for the reunified society is less pronounced than the self-reinforced

upward tendency in the scope of cooperativeness and in the number of trustworthy individuals of East Germans. The corresponding trajectory of convergence is shown in Figure 2.

# 3 Risking: literature and theoretical considerations

## 3.1 Political system and risk attitude

Similar to trust that is found to be –if at all– poorly explained by the self-interest-approach (Fehr and Rockenbach 2003), risk aversion at the societal level is not a simple matter of rationality but rather a matter of identity. But what is it that makes a society risk averse going beyond the slogan of a country being a "soft power" that is risk averse regarding only internal concerns? The answer given by Laidi (2010) is that the evolution of a general notion of risk aversion at the societal level requires a democratic experience and a system where public deliberation plays a crucial role in evaluating risk. In analogy to the First Amendment, freedom of opinion in the FRG is guaranteed in Article 5 of its Basic Law (*Grundgesetz*), which comprises freedom of speech and freedom of press. It explicitly interdicts censorship.[5] In contrast, the GDR witnessed a constitution that successively eroded the freedom of opinion from its first version of 1949 to its proceeding versions of 1968 and 1974, which officially set the state in its Article I under the leadership of its one and only party, the Marxist-Leninist party (SED). It cleared the way for all sorts of uncritical propaganda. Actually, before the "Monday Demonstrations" of the late 1980s that initiated the collapse of the GDR, debates of internal and external concerns of society existed only in the scattered and merely existent underground but not in the public sphere. Another potential argument for a relatively higher risk affinity among East Germans lies in the process of self-liberalization itself: Given the omni-present

[5]The *Grundgesetz* is Germany's post-war constitutional law that was formally approved on 8 May 1949, and, with the signature of the Western Allies, came into effect on 23 May 1949, as the constitution of West Germany. Today the *Grundgesetz* represents the constitution of unified Germany.

threat of the system, a peaceful self-liberalization required former GDR citizens to show a willingness to take risk above normal – on both sides, that is, among protesters as well as among subjects working for the system (not to resort to squeezing the trigger).[6] Convergence to a lower level prevalent among West German individuals might, at least to some extent, reflect a corresponding adjustment of risk attitudes back to normal.

A perspective that is at first sight at odds with the above line of argumentation can be found in a recent and rather macroeconomic strand of literature that is concerned with financial risk taking and the development of respective attitudes. It comes up with another reasoning regarding the nexus of personal or collective experience and risk attitude. For example, it suggests that individuals who had an experience of a large macroeconomic shock like the Great Depression show a long-lasting effect on their attitudes towards risk due to this experience ("depression babies"). An overview of this literature is given in Malmendier and Nagel (2011). According to this literature, it is in particular personal financial risk experience that shapes one's preferences towards risk. Given that planned economies in general failed to attenuate macroeconomic shocks and showed similar business cycle patterns as market economies (Hillinger 1992), we would expect no substantial difference in risk attitude. However, we should keep in mind that macroeconomic shocks were experienced quite differently in the two systems. The GDR's collectivist social planner's state, for example, virtually guaranteed full employment, making it unnecessary for citizens to insure against unemployment. In this context, insurance through free capital market instruments, represented by a vast diversity of stock market vehicles, can be seen as an experience good or service in the sense of Nelson (1970). Interpreting (financial) risk aversion in this way, we would also expect former GDR citizens to be characterized by a relatively lower level of risk aversion compared to West German individuals whose attitude evolved over decades of repeated experience with capital market instruments needed for insuring against macroeconomic shocks. Yet, this line of reasoning is restricted to the financial aspect of risk aversion and it does not directly apply to a more

[6]For the latter argument, keep in mind that the Tiananmen Square student protests and massacre of 1989 just preceded the Monday Demonstrations in Leipzig and other East German cities by a few months.

general notion of risk attitude.

### 3.2 Transition and risk attitude

On theoretical grounds, the study on the association of relative income and life satisfaction by Easterlin and Plagnol (2008) can be seen as the link to combine relative income and positional concerns with risk attitudes to predict convergence between East and West Germans. As Easterlin and Plagnol (2008) show relative income more or less stagnated or only moderately trended for East and West Germans from 1991 to 2004, while it markedly decreased for (Turkish) foreigners living in Germany over the same period.

Following the theoretical reasoning in Süssmuth and von Weizsäcker (2007) based on Friedman and Savage (1948), Gregory (1980), and Rosenthal (2004), this development of relative incomes can imply a reduction in the willingness to take risk due to positional concerns with regard to other societal groups for East Germans.

The argument is based on the idea that an individual's attitude to risk is determined by the relative position of that individual in the income distribution of a society rather than by her absolute net worth. Attainment and assurance of a particular position generates an additional gain in utility through status and, hence, an incentive to take risk. If this lead, in a "pecking order" sense (see, e.g., Becker *et al.* 2005), is of permanent rather than transitory nature, lasting for more than a decade as documeted in Easterlin and Plagnol (2008), this could clearly lower the incentive to take risk.

## 4 Evidence

### 4.1 Data and empirical approach

Alike Alesina and Fuchs-Schündeln (2007), who study preferences for state intervention, we use data from the German Socio-Economic Panel (SOEP). The SOEP is a representative longitudinal database that was first administered in former West Germany in 1984

and was extended to East Germany in spring 1990, i.e. about half a year after the fall of the wall in 1989 and only a couple of months before formal reunification in October 1990 (cf. Wagner *et al.* 2007). We are thus able (i) to identify individuals who lived in the former GDR before reunification and (ii) to follow them over time. This last feature is a particular benefit since it allows examining intra-individual changes in measures of trust, fairness, and cooperativeness as well as in risk attitude.

In 2003 and 2008, the SOEP asked respondents about social trust as well as their perceptions of others being fair or cooperative. Social trust is surveyed as responses to *"What is your opinion on the following three statements?"*, the items being: (A) *"On the whole one can trust people"* and (B) *"If one is dealing with strangers, it is better to be careful before one can trust them."* Responses are given on a Likert-type ordinal 4-point scale, ranging from 1 *"totally agree"* to 4 *"totally disagree"*.[7] To ease interpretation, responses from the two items are each collapsed into a binary indicator which takes on value one if the respondent is a trusting one, i.e. if he or she totally agrees with the first statement, or in the case of (B) totally disagrees with the statement. This might seem a loss of information, but additional ordered probit estimations do not yield substantially different results.[8] Item (B) asks about an assessment of the trustworthiness of strangers. It is noteworthy that this group of strangers usually refers not only to individuals who are not socially connected to the respondent but also comprises foreign nationals.

Perceived fairness in the society is surveyed by *"Do you believe that most people ..."* (C) *"would exploit you if they had the opportunity"* or (D) *"would attempt to be fair towards you?"*. Our –again binary– fairness variable equals one if the respondent approves the latter statement.

Similarly, the binary *"people are cooperative"* indicator is generated from the responses to *"Would you say that for most of the time, people ..."* given by (E) *"attempt to be*

[7] There is also a third item in the survey as possible answer a question that reads *"Nowadays one cannot rely on anyone."* As we consider this item to be a rather extreme "black or white" item, additionally requiring respondents to take a rather fuzzy backward looking perspective, we do not consider this item in the following.

[8] Detailed results from ordered probit estimates are available on request from the authors.

*helpful?"* or (F) *"only act in their own interests?"*. Approving the first statement induces value one in our variable.

Individuals' risk attitudes were first measured in 2004, with a general risk attitude item as well as context-specific risk attitudes, such as risk-taking in financial matters, in sports, or in health, and another risk measure derived from a hypothetical lottery scenario. To be able to examine the development over time, we however use the general risk attitude scale since it is only this indicator that is re-measured in 2008.[9] The questions in both waves of the survey read *"Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?;"* the scale of responses runs from 0 *"risk averse"* to 10 *"fully prepared to take risks."* We employ least squares estimation for this variable as, again, results from ordered probit estimations are not substantially different from the ones we present below. Our baseline specifications are linear probability models accounting for random effects (RE-LPM) of the following form

$$y_{it} = \mu + x'_{it}\beta + \gamma EastGerman_i + \delta Y08 + \phi\left(EastGerman_i \times Y08\right) + \alpha_i + \epsilon_{it}, \qquad (4)$$

where $y = (\text{trust} \mid \text{fairness} \mid \text{cooperativeness} \mid \text{risk})$, and $x$ denotes covariates comprising the socio-demographic characteristics sex, age (specified as a cubic function), educational attainment, current employment status, employment history (yrs. of full-time/part-time employment or unemployment), (log of ) net household income, marital status, number of children, health status, and - in order to account for childhood and teenage circumstances - parental education, parental religion, the size of the place the respondent lived at until the age of 15, and further whether he or she still lives in his or her childhood hometown. Moreover, we capture intra-German variation of individuals' environment by including the following contextual characteristics at the federal state level: Gini coefficient, unemployment rate, GDP p.c.,[10] rate of solved crime cases, expenditure for education, and

[9] In their experimentally validated study of individual risk attitudes based on SOEP data, Dohmen *et al.* (2011) document a substantial, and significant positive correlation between measures of context-specific and general risk attitude.

[10] Both the economic environment indicators and particularly the individual's own employment history will to some extent capture the effects of East Germany's economic downswing after the fall of the wall. They are required in an effort to disentangle the effect of Communism from the experience of immediate post-unification years that were characterized by dramatic

proportion of foreigners. Obviously, coefficient $\gamma$ measures the observed difference between East and West German subjects in 2003 (2004). The interaction-term coefficient $\phi$ quantifies the (causal) impact the advancement of the unification process has on closing this gap up to the year 2008 ($Y08$). A detailed summary statistics of variables is given in Appendix. Throughout all our estimates, LM tests imply the rejection of the null: $Var(\alpha_i) = 0$, confirming our RE specification. Samples that combine the waves of 2003 and 2008 (trust, fairness, cooperativeness) cover 24,160 person-year observations. The number of observations for the sample that combines the waves of 2004 and 2008 (risk) is 36,332.

## 4.2 Findings and discussion

### 4.2.1 Trust items

Table 1a reports our RE-LPM estimates for the two trust items as described in Section 4.1. For all specifications [1] to [4], we estimate a statistically significant negative coefficient for individuals who experienced the GDR system (East German), suggesting a still existent relatively lower level of trust prevalent among this group of individuals in the second decade of the unification process. In the even specifications [2] and [4], we also consider a potential effect from moving to West Germany after reunification. We expect these respondents to show a relatively higher level of trust compared to individuals who did not move to the West as it is plausible to assume that either trust fosters migration or migrating forces to trust. The estimates reported in Table 1 support this hypothesis for the "general trust" item but not for trust towards strangers.[11] Yet, in terms of size, an East-West gap remains and increases throughout, meaning that the East-West differentials are even larger for those East Germans who did not migrate after reunification.

structural change and shocks in the East German labor market.

[11] As noted earlier the statistical insignificance of the "Moved West" coefficient in the assessment of the trustworthiness of strangers might be the product of bias due to the fact that the group of "strangers" is not clearly defined and, among others, also comprises foreign nationals.

The central coefficient estimate to assess East-West convergence as described by the model outlined in the preceding section is the interaction term of East German background and the ending year of our analysis 2008 (EGerman*08). As can be seen from estimates of specification [2] to [4] in Table 1, there is convergence for the item capturing the assessment of the overall trustworthiness of other people (Can trust people) and perceived trustworthiness of strangers (Careful with strangers). All other things being equal, the estimates of specification [2] can be read in the following way: Starting from an East German trust level of $-0.065$, every year, that is, four times up to 2008, a term of $+0.018/4$ is added. According to this stylized calculation of a convergence trajectory (cf. Alesina and Fuchs-Schündeln 2007), full convergence of this trust item between East and West German individuals will be reached in less than one decade from now. Thus far, our findings are clearly in line with theoretical predictions given in Section 3; in particular, with the prediction of a possibly substantial inertia in the passing of trust as a cultural value across generations.

Estimated coefficients of specifications [3] and [4] imply that, other things being equal, full convergence in perceived trustworthiness of strangers is reached by 2009, that is, 20 years after reunification.

Another important prediction of the Tabellini (2008a) model applied to German unification is that not only East Germans become more trusting and trustworthy but also that the opposite should apply to West Germans, though to a quantitatively lesser extent (Figure 3). To study this implication, we estimate a year 2008 effect for our 2003/2008 pool subsampling only West German subjects living in West Germany (Table 1b). Indeed, we find for the more general first trust item (Can trust people) a significant downward tendency that corresponds to approximately half of the estimated gap between East and West German individuals (Table 1a, 1b).

In sum, regression results of our analysis of different trust items confirm that individuals who experienced the GDR system still show a relatively higher level of social distrust and scepticism. We also find that it is important to account for East-West migration in the case of the more general trust measure.

Although pointing in the same direction, our estimates suggest to carefully distinguish between different dimensions of perceived trustworthiness: The measure for the overall trustworthiness of other people will possibly converge some thirty years or one generation after reunification, while the convergence in perceived trustworthiness of strangers is estimated to be reached in recent years, that is, less than one generation after reunification.

Table 1a. Basic Random Effects LPM estimates: Trust items (dependent)

| | Can trust people | | Careful with strangers | |
|---|---|---|---|---|
| | [1] | [2] | [3] | [4] |
| East German | -0.035*** | -0.065*** | -0.030** | -0.042** |
| | (0.009) | (0.014) | (0.013) | (0.018) |
| Year 08 | 0.006 | 0.005 | 0.005 | 0.004 |
| | (0.010) | (0.010) | (0.015) | (0.015) |
| EGerman*08 | 0.012* | 0.018*** | 0.027*** | 0.030*** |
| | (0.007) | (0.007) | (0.009) | (0.010) |
| Moved west | – | 0.047*** | – | 0.018 |
| | | (0.014) | | (0.019) |
| Controls | + | + | + | + |
| $R^2$ | 0.018 | 0.019 | 0.021 | 0.021 |

Source: SOEP, 2003/08; N = 24,160

Note: ***, **, * denotes statistical significance at 1, 5, 10 percent level, respectively; robust standard errors given in parentheses. "Careful with strangers" is a binary variable recoded such that value 1 does not imply distrust, but trust.

Table 1b. Basic Random Effects LPM estimates: Trust items (dependent); subsample: West Germans living in West Germany; model: $y_{it} = \mu + x'_{it}\beta + \delta Y08 + \alpha_i + \epsilon_{it}$

| | Can trust people | Careful with strangers |
|---|---|---|
| Year 08 | -0.014*** | -0.016 |
| | (0.003) | (0.006) |
| Controls | + | + |
| $R^2$ | 0.020 | 0.048 |

Source: SOEP, 2003/08; N = 21,873 (13,941 pers.)

Note: ***, **, * denotes statistical significance at 1, 5, 10 percent level, respectively; robust standard errors given in parentheses. "Careful with strangers" is a binary variable recoded such that value 1 does not imply distrust, but trust; state-level controls are dropped due to lack of variation.

As for the theoretical predictions, our estimates employing the most general measure of trust as dependent variable confirm all testable implications of the model outlined in Section 2.3.

### 4.2.2 Intergenerational transmisison of trust

This subsection is concerned with a central implication of both our interpretation of the precedingly presented estimates and our model. Following the logic of Tabellini (2008b) adapted to the East German setting, we suggested that present differences are rooted in experiences of (dis)trust which date back to the days of the GDR and have been transmitted from one generation to the next to the extent that children learn behavioral patterns from their kin and others with whom they are in close contact, such as teachers (Guiso *et al.* 2006). In the estimates reported in Table 2, we thus merged trust item A ("*on the whole one can trust people*") answers of an individual with the corresponding responses of her mother and father. This reduces our sample size by one digit. Obviously, there is a substantial East-West difference also found for this subsample.

Table 2. OLS estimate of ordinally scaled trust item A (dependent)

| Group | Regressor | Coefficient | P-value | Individual $R^2$-share | Group $R^2$-share |
|---|---|---|---|---|---|
| 1 | Paternal trust | 0.129*** | 0.000 | 0.308 | 0.811 |
| | Maternal trust | 0.206*** | 0.000 | 0.502 | |
| 2 | Female | -0.040 | 0.122 | 0.008 | 0.031 |
| | Age | -0.046** | 0.013 | 0.012 | |
| | Age squared | 0.001** | 0.022 | 0.010 | |
| 3 | East | -0.117*** | 0.000 | 0.006 | 0.063 |
| 4 | Education | 0.029*** | 0.000 | 0.009 | 0.094 |
| | ln Income p.p. | -0.369 | 0.147 | 0.036 | |
| overall | $R^2$: 0.109 | | | | |

Source: SOEP, 2003; N = 2,373

Note: ***, **, * denotes statistical significance at 1, 5, 10 percent level, respectively; p-values are based on robust standard errors; $R^2$decomposition: Owen value-based (Hüttner and Sunder 2012); p.p. denotes per person in household

Moreover, parental trust attitudes as well as education are found to be highly significant covariates of individual trust. Using a decomposition of the R-squared based on the Owen value, as recently proposed by Hüttner and Sunder (2012), we find that parental trust as a group explains more than 80 percent of the explained variance in individual trust measure A, followed by educational background and log income per person of a household with a corresponding share of 9.4 percent. Taken alone, the trust attitude of mothers accounts for more than 50 percent of explained individual trust variation. We interpret this result as evidence for the effects captured in our empirical analysis of trust items arising intergenerationally rather than individually, i.e. not within the same person.[12]

#### 4.2.3 Fairness, cooperativeness, risk attitude

Table 3a reports RE-LPM estimates employing as dependent variables our measures of perceived fairness and cooperativeness as well as of individual risk attitude. As can be seen immediately from the first line of coefficient estimates in Table 3a, East German individuals report lower levels of perceived fairness and cooperativeness, but are relatively more inclined to take risks.[13] This gap is statistically close to but not significant at conventional levels for the fairness item. It might be due to a statistically significant decline of perceived fairness observed among West Germans living in West Germany (Table 3b). In the case of cooperativeness, the gap is estimated as relatively profound if we control for moves to the West. An interpretation of this finding is that movers might have assessed cooperativeness higher than individuals who stayed in East Germany after the fall of the wall, in particular, against the backdrop of no discernible downard tendency in cooperativeness in the Westeners sample (Table 3b). Again, this is in line with the

[12]Note, a detailed analysis of trust convergence using this child-parent-merging strategy and combining the two SOEP waves 2003 and 2008 is beyond the scope of the present study. It is possible, although attrition then further reduces the sample size per wave. Furthermore note that our findings are qualitatively unaltered when resorting to an ordered Probit model. Both pooled waves and ordered Probit estimates are available on request from the authors.

[13]Recently, Bonin *et al.* (2009) find some first indications for the latter result as a "side product" of their study on native-migrant differences in risk attitudes using German data.

learning process as outlined in the model above.

Table 3a. Basic RE-LPM estimates: Fairness, cooperativeness, risk attitude

| | Fairness | | Cooperativeness | | Risk | |
|---|---|---|---|---|---|---|
| | [1] | [2] | [3] | [4] | [5] | [6] |
| East German | -0.022 | -0.025 | -0.011 | -0.062** | 0.297*** | 0.290** |
| | (0.019) | (0.026) | (0.018) | (0.025) | (0.083) | (0.116) |
| Year 08 | 0.064*** | 0.064*** | 0.065*** | 0.064*** | 0.169* | 0.170* |
| | (0.023) | (0.023) | (0.022) | (0.022) | (0.087) | (0.089) |
| EGerman*08 | 0.007 | 0.008 | -0.014 | -0.003 | -0.283*** | -0.282** |
| | (0.013) | (0.014) | (0.013) | (0.013) | (0.053) | (0.056) |
| Moved west | – | 0.005 | – | 0.082*** | – | 0.012 |
| | | (0.028) | | (0.027) | | (0.125) |
| Controls | + | + | + | + | + | + |
| $R^2$ | 0.052 | 0.052 | 0.047 | 0.048 | 0.102 | 0.102 |

Source: SOEP, 2003/04/08; N = 24,160; 26,332

Note: ***, **, * denotes statistical significance at 1, 5, 10 percent level, respectively; robust standard errors given in parentheses. "Fairness" and "Cooperativeness" are binary variables representing whether the respondent perceives others to act fair or to be helpful.

Table 3b. Basic RE-LPM estimates: Fairness and cooperativeness
subsample: West Germans living in West Germany;
model: $y_{it} = \mu + x'_{it}\beta + \delta Y08 + \alpha_i + \epsilon_{it}$

| | Fairness | Cooperativeness |
|---|---|---|
| Year 08 | -0.016*** | 0.000 |
| | (0.006) | (0.006) |
| Controls | + | + |
| $R^2$ | 0.048 | 0.048 |

Source: SOEP, 2003/08; N = 21,873 (13,941 pers.)

Note: ***, **, * denotes statistical significance at 1, 5, 10 percent level, respectively; robust standard errors given in parentheses. "Fairness" and "Cooperativeness" are binary variables representing whether the respondent perceives others to act fair or to be helpful; state-level controls dropped due to lack of variation.

Another striking result is that we find no significant East-West convergence of either perceived fairness or cooperativeness between 2003 and 2008, while risk attitudes fully converged before the end of the second decade after reunification. The latter finding is

straightforwardly explained by the learning process and/or lowered positional concerns effect described in Section 3.1 and 3.2. In fact, it is suggestive for a relatively short period of learning and adjustment to a more risk averse attitude taking the time of about 1.5 to 2-times the length of an average business cycle. As can be seen from Table 3b there is a statistically significant downward tendency with regard to perceived fairness among West Germans that is in terms of size almost two thirds of the size of the gap in fairness perception that exists up to 2008 between West and East German subjects. This finding of limited convergence[14] in fairness and cooperativeness can be reconciled with the theoretical model outlined in Section 2.3. However, it requires the relatively strong assumption of a low elasticity with which the upper bound of the scope of cooperation ($Y^1$) reacts to an increase of trust, i.e. to an increase in the number of trustworthy individuals in society. Figure 3 makes the point. As in Figure 1 and 2, the steeper of the two respectively intersecting functions represents $Y^1$, while the flatter one shows $N$. If cooperativeness reacts only weakly to an increase in trust, $Y^1$ is fairly steep. As trust increases, the initial (bold lines) East German steady state ($E_0$) relocates as the number of trustworthy individuals $n$ increases exogenously after reunification.

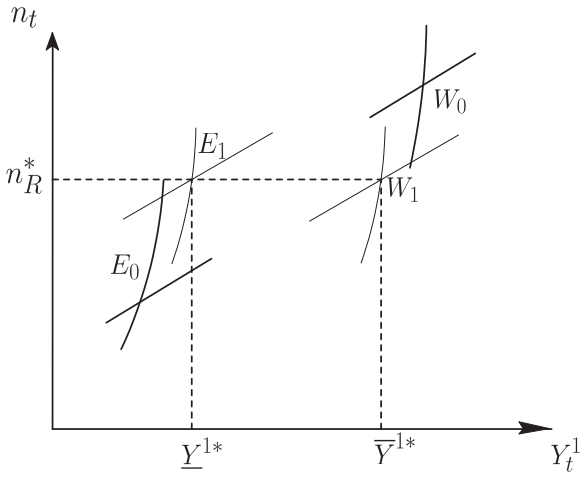


Figure 3. Convergence in trust – (nearly) no convergence in cooperativeness

[14]Limited in the sense that we observe a downward tendency in the West, but no statistically significant upward-movement comparing East with West German individuals.

The shift along the ordinate is further amplified by the second strategic externality due to parents adjusting values and passing them to their offspring. A new steady state level of trust for reunified Germany is reached ($n_R^*$). Although there is a profound convergence along the ordinate, the effect on cooperativeness is small given a low elasticity with which $Y^1$ reacts to an increase in $n$. As a result, there is no unique steady state in the level of cooperativeness for the re-united population, i.e., $Y_R^{1*} \in \left[\underline{Y}^{1*}, \overline{Y}^{1*}\right]$. Note, even though this explains both of our empirical findings, i.e. persistence in the East-West cooperativeness gap and a simultaneous convergence in trust, it rests on a rather special case.

#### 4.2.4 Age effects

To analyze in more detail whether the duration of living in the former repressive East German system has left an imprint on our social and risk attitude measures for easterners, we run additional regressions including terms that interact the East German Background with age. Results for these estimates are shown in Table 4.

Overall, we do not find evidence for an association between age (or cohort) interacted with the East dummy and general social trust or individuals' perceived fairness and cooperativeness.[15] The picture is different for risk attitudes as dependent. First, it is noteworthy that overall we find younger individuals to have been slightly more risk loving than older ones (slope of age without interaction). Secondly, however, in the case of easterners, risk willingness profoundly increases with age, i.e. with time spent in the, at least, economically less risky and widely without public deliberation environment of the GDR.

[15] Fairly similar results are obtained if we consider cohorts instead of age. Corresponding estimates are available on request from the authors.

Table 4. Further RE-LPM estimates: Age effects

| | Trust 1 | Trust 2 | Fairness | Cooperate | Risk |
|---|---|---|---|---|---|
| East German | -0.059*** | -0.066*** | -0.018 | -0.041 | -0.094 |
| | (0.016) | (0.023) | (0.036) | (0.035) | (0.157) |
| Year 08 | 0.004 | 0.004 | 0.061*** | 0.063*** | 0.158* |
| | (0.010) | (0.015) | (0.023) | (0.022) | (0.091) |
| EGerman*08 | 0.018** | 0.028*** | 0.006 | -0.004 | -0.317*** |
| | (0.007) | (0.010) | (0.014) | (0.014) | (0.057) |
| Age | 0.001*** | 0.001*** | 0.003*** | 0.005*** | -0.029*** |
| | (0.000) | (0.000) | (0.001) | (0.001) | (0.002) |
| EGerman*Age | -0.010 | 0.050 | -0.003 | -0.033 | 0.823*** |
| | (0.023) | (0.033) | (0.052) | (0.050) | (0.224) |
| Controls | + | + | + | + | + |
| $R^2$ | 0.018 | 0.021 | 0.050 | 0.046 | 0.102 |

Source: SOEP, 2003/04/08; N = 24,160; 26,332

Notes: ***, **, * denotes statistical significance at 1, 5, 10 percent level, respectively; robust standard errors given in parentheses; Trust 1: "Can trust people", Trust 2: "Careful with strangers"; the latter has been recoded such that value 1 does not imply distrust, but trust; "Fairness" and "Cooperate" are binary variables representing whether respondents perceive others to act fair or to be helpful.

## 4.3 Sensitivity analysis: Placebo effects

One may be concerned that our findings are driven by differences in mentality or local environments rather than resultant from socialization in the Communist system. To demonstrate that this is not the case, we counterfactually construct a Southern part of Germany consisting of the two West German federal states (*Alte Länder*) Bavaria and Baden Württemberg. We compare this reference group of federal states in a hypothetical empirical convergence model of the form shown in eq. (4) with a series of Northern *Alte Länder*, i.e., Schleswig-Holstein, Hamburg, Bremen, and Lower Saxony, corresponding in terms of sample size roughly to our East German data.[16] As can be seen from estimates

[16] This division makes sense inasmuch as Northern and Southern Germans are usually believed to differ strongly in mentality and attitudes: A stereotype Northern German would for example be prudent, distanced, unsentimental, pragmatic and honest, whereas a typical South German,

in Table 5, there is not a single statistically significant coefficient estimate indicating differences in the analyzed variables between Northern and Southern regions of West Germany. Hence, we are confident to actually have captured effects that result from the experience of two polar political systems as shown in the preceding section.

Table 5. Placebo RE-LPM estimates: Northern vs. Southern *Alte Länder*

| | Trust 1 | Trust 2 | Fairness | Cooperate | Risk |
|---|---|---|---|---|---|
| North German | 0.027 | 0.088 | 0.110 | -0.087 | -0.230 |
| | (0.061) | (0.077) | (0.116) | (0.114) | (2.055) |
| Year 08 | 0.136 | -0.057 | 0.119 | -0.146 | 1.366 |
| | (0.102) | (0.127) | (0.179) | (0.181) | (1.255) |
| NGerman*08 | 0.014 | -0.029 | -0.005 | 0.077** | -0.297 |
| | (0.019) | (0.024) | (0.034) | (0.034) | (0.187) |
| Controls | + | + | + | + | + |
| $R^2$ | 0.030 | 0.027 | 0.059 | 0.057 | 0.123 |

Source: SOEP, 2003/04/08; N = 9,028; 7,690

Notes: ***, **, * denotes statistical significance at 1, 5, 10 percent level, respectively; dependent variables definitions as in Table 3; North Germany reference group: Schleswig-Holstein, Hamburg, Bremen, Lower Saxony; South Germany reference states: Bavaria, Baden-Württemberg

# 5 Conclusion

On November 9th 1989, when a more or less unintentional East German government announcement sent a surge of people westwards, ultimately bringing the wall down, a new chapter in German history began. For decades official propaganda in the GDR had tried to discredit the "exploitative" market-based economy and "rapacious" society of the FRG. The once omnipresent fear of denouncement and detainment seemingly ceased over night. Against this background, we addressed the question whether and if so by how much after 20 years of reunification restoration of social trust is completed, fairness

and a Bavarian in particular, is usually thought to be cheerful, with a good sense of humour, pious, and wearing traditional clothing (such as Lederhosen and Dirndl). To some extent, this gradient can be traced back historically inasmuch as large parts of the areas of todays Baden-Württemberg and Bavaria were not part of the Prussian Empire.

and cooperativeness restored, and attitudes towards risk converged. While we find that risk attitudes fully converged in the second decade of reunification, it will take at least one generation for social trust and possibly much longer for perceived cooperativeness to converge. The implied trajectories of our estimates are shown to be in line with predictions from a model that incorporates individual responses both to incentives and to values inherited from earlier generations as recently suggested by Tabellini (2008a). This is a most remarkable result as it identifies the passing of cultural traits and values as a central channel of explanation for limited social convergence and long lasting effects from historic events in the context of German division and unification. It complements and to some extent also challenges other routes of explanation based on network externalities and scale effects (e.g. Uhlig 2006) that require the assumption of persistence in their driving forces in order to generate discrepancies that last for several generations. Similarly, after more than two decades of an ongoing reunification process it seems not justified to argue that it is the institutional shock (as, for example, in Acemoglu *et al.* 2001, 2002, 2005) that accounts for the limited convergence we observe for social trust as well as for individuals' perceptions of others acting fair or being cooperative.

# Appendix

| | 2003-08 Mean | Std. Dev. | 2004-08 Mean | Std. Dev. |
|---|---|---|---|---|
| Can trust people | 0.055 | (0.228) | – | |
| Careful with strangers | 0.117 | (0.321) | – | |
| Fairness | 0.515 | (0.499) | – | |
| Cooperativeness | 0.358 | (0.479) | – | |
| Risk willingness | – | | 4.376 | (2.327) |
| R is East German | 0.303 | (0.459) | 0.302 | (0.459) |
| Interview in 2008 | 0.437 | (0.496) | 0.445 | (0.497) |
| Age | 48.288 | (17.503) | 48.609 | (17.601) |
| R is male | 0.480 | (0.499) | 0.478 | (0.499) |
| R is migrant | 0.128 | (0.334) | 0.129 | (0.335) |
| R is disabled | 0.125 | (0.331) | 0.128 | (0.334) |
| R is married | 0.593 | (0.491) | 0.589 | (0.491) |
| R is married, but separated | 0.017 | (0.131) | 0.016 | (0.128) |
| R is divorced | 0.082 | (0.275) | 0.084 | (0.278) |
| R is widowed | 0.068 | (0.253) | 0.070 | (0.256) |
| Education: missing | 0.068 | (0.251) | 0.069 | (0.255) |
| Education: no qualification | 0.040 | (0.197) | 0.040 | (0.196) |
| Education: intermediate sec. | 0.352 | (0.477) | 0.351 | (0.477) |
| Education: upper secondary | 0.173 | (0.379) | 0.174 | (0.379) |
| R has no vocational qualif. | 0.238 | (0.426) | 0.237 | (0.425) |
| R has university degree | 0.097 | (0.296) | 0.098 | (0.298) |
| Number of children | 0.498 | (0.869) | 0.490 | (0.868) |
| Log of net HH income | 7.702 | (0.540) | 7.702 | (0.542) |
| R is unemployed | 0.070 | (0.255) | 0.071 | (0.257) |
| R is retired | 0.234 | (0.423) | 0.234 | (0.423) |
| R is on maternity leave | 0.022 | (0.147) | 0.022 | (0.147) |
| R is out of labor force | 0.132 | (0.338) | 0.136 | (0.343) |
| R is in dual apprenticeship | 0.024 | (0.154) | 0.024 | (0.153) |
| R is civil servant | 0.037 | (0.189) | 0.036 | (0.187) |
| R is white collar worker | 0.284 | (0.451) | 0.280 | (0.449) |
| R is temporary employed | 0.067 | (0.250) | 0.068 | (0.251) |
| R has public employer | 0.059 | (0.235) | 0.059 | (0.236) |
| LM experience: full-time (yrs.) | 17.442 | (14.097) | 17.530 | (14.141) |
| LM experience: part-time (yrs.) | 2.609 | (5.621) | 2.671 | (5.674) |
| LM experience: unemploymt. (yrs.) | 0.843 | (2.045) | 0.870 | (2.071) |
| Father's education: missing | 0.096 | (0.294) | 0.096 | (0.295) |
| Father's education: other | 0.029 | (0.170) | 0.029 | (0.169) |
| Father's education: none | 0.031 | (0.173) | 0.031 | (0.174) |

(continued on next page)

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|---|---|---|---|---|
| Father's education: middle sec. | 0.135 | (0.341) | 0.135 | (0.342) |
| Father's education: interm. sec. | 0.007 | (0.088) | 0.007 | (0.088) |
| Father's education: upper sec. | 0.090 | (0.286) | 0.091 | (0.288) |
| Mother's education: missing | 0.084 | (0.278) | 0.085 | (0.279) |
| Mother's education: other | 0.023 | (0.152) | 0.023 | (0.152) |
| Mother's education: none | 0.037 | (0.190) | 0.037 | (0.190) |
| Mother's education: middle sec. | 0.166 | (0.372) | 0.168 | (0.374) |
| Mother's education: interm. sec. | 0.005 | (0.074) | 0.005 | (0.076) |
| Mother's education: upper sec. | 0.044 | (0.206) | 0.045 | (0.208) |
| Father has university degree | 0.105 | (0.306) | 0.104 | (0.306) |
| Mother has university degree | 0.054 | (0.227) | 0.055 | (0.228) |
| Father's religion: missing | 0.455 | (0.498) | 0.455 | (0.498) |
| Father's religion: none | 0.095 | (0.293) | 0.096 | (0.295) |
| Father's religion: Protestant | 0.237 | (0.425) | 0.236 | (0.425) |
| Father's religion: other religion | 0.027 | (0.164) | 0.027 | (0.163) |
| Mother's religion: missing | 0.464 | (0.498) | 0.465 | (0.498) |
| Mother's religion: none | 0.081 | (0.273) | 0.081 | (0.274) |
| Mother's religion: Protestant | 0.245 | (0.430) | 0.244 | (0.429) |
| Mother's religion: other religion | 0.026 | (0.160) | 0.026 | (0.160) |
| Place raised to age 15: missing | 0.045 | (0.207) | 0.044 | (0.205) |
| Place raised to age 15: large city | 0.209 | (0.407) | 0.209 | (0.407) |
| Place raised to age 15: medium city | 0.168 | (0.374) | 0.167 | (0.373) |
| Place raised to age 15: small city | 0.206 | (0.405) | 0.208 | (0.406) |
| Still lives in town where raised | 0.526 | (0.499) | 0.527 | (0.499) |
| Regional Gini coefficient | 0.276 | (0.014) | 0.277 | (0.014) |
| Regional UE rate | 10.127 | (4.535) | 10.123 | (4.510) |
| Regional crime-solving rate | 55.235 | (5.818) | 55.967 | (5.991) |
| Regional GDP p.c. | 111.292 | (8.287) | 112.701 | (7.295) |
| Regional expenditure for education | 3.378 | (0.664) | 3.322 | (0.638) |
| Regional proportion of foreigners | 8.112 | (3.821) | 8.088 | (3.798) |
| $N$ | 24,160 | | 26,332 | |

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