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Changing Conditions, Persistent Mentality: An Anatomy of East German Unhappiness, 1990-2016

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Abstract: We decompose the persistent satisfaction gap between East and West Germany into effects of objective circumstances and subjective mentality, the latter presumed to be a legacy of communist socialization. Using the methodology proposed by Senik (2014) in a cross-national context, we capture circumstances by the region of residence (East vs. West) and mentality by whether an individual is a “native” of the respective region or has moved (“migrated”) to that region. We differentiate our analysis by years since German unification, birth cohorts, and the length of time a “migrant” has lived in her current region of residence. Using about 420,000 observations, 1990-2016, we find 54.4 percent of the satisfaction gap to be attributable to mentality. The mentality gap in the overall sample is driven by birth cohorts socialized under communism, the contribution of mentality to the satisfaction gap being 81.2 percent in this cohort group. While the circumstance-related gap diminished steadily over time, the mentality-related gap changed non-monotonically, reflecting different happiness responses of East and West Germans to politico-economic shocks. Exploiting the panel nature of our data, we find the mentality-related gap to show little indication of within-person changes over time.

Keywords: Germany; happiness; life satisfaction; unification; mentality; communism

JEL classification: I31, P36, P16, D63

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Highlights

- We decompose the satisfaction gap between East and West Germany into effects of objective circumstances and subjective mentality.
- We use about 420,000 observations from the German Socio-Economic Panel, 1990-2016.
- In the overall sample 54.4 percent of the satisfaction gap are attributable to mentality.
- The mentality gap is driven by birth cohorts socialized under communism.
- In cohorts socialized under communism mentality's contribution amounts to 81.2 percent.
- The circumstance-related gap diminished steadily over time.
- The mentality-related gap changed non-monotonically, reflecting different happiness responses of East and West Germans to politico-economic shocks.
- The mentality-related gap shows little indication of within-person changes over time.

1. Introduction

Several researchers have noted a persistent satisfaction gap between East and West Germany after the fall of the Berlin Wall (Gerlach and Stephan 1996, Frijters et al. 2004a, 2004b, Easterlin and Plagnol 2008, Easterlin 2009, Vatter 2012, Petrunyk and Pfeifer 2016). To illustrate, the mean level of life satisfaction of individuals living in East Germany was 6.582 (on a 0-10 scale) in 1990, whereas the corresponding value for West Germany was 7.295, which makes a difference of 0.713.¹ Even by 2016— more than 25 years after unification — the difference in happiness amounted to 0.335 points.

While objective conditions may explain part of the East-West satisfaction gap in Germany (for a recent account see Petrunyk and Pfeifer 2016), another, complementary, explanation involves different “mentalities” of individuals socialized in the two parts of the country. As argued by Senik (2014), attitudes, beliefs and ways of appreciating reality constitute persistent cultural traits that may explain considerable fractions of cross-national happiness patterns over and above differences in economic and other conditions. Indeed, using individuals’ country of residence as an indicator of country-specific *circumstances* and their status as natives or immigrants as an indicator of culturally determined *mentality* she found mentality to be a major predictor of cross-national happiness patterns in Western Europe.

While mentality differences may be most salient at the cross-national level, they may also play a role *within* countries, particularly so if people in different parts of a country have been influenced by different cultures. Germany provides a case in point. For Germany, it has been found that — as a legacy of Marxist materialist philosophy — individuals living in East Germany display a greater appreciation of materialist as opposed to non-materialist values (Van Hoorn and Maseland

¹ In our empirical analysis we use life satisfaction as our measure of subjective well-being but refer to (life) satisfaction, happiness, and (subjective) well-being synonymously unless stated otherwise.

2010). In a similar vein, Alesina and Fuchs-Schündeln (2007) found East Germans to have significantly higher aspirations with respect to public social policies than West Germans. Furthermore, Fuchs-Schündeln and Schündeln (2015) found that appreciation of democracy is weaker in people who have lived under dictatorial regimes, a finding that may apply specifically to East Germany.

This paper draws on both types of evidence – namely that mentality explains cross-national happiness patterns and that post-communist/post-dictatorship mentality persists even after the respective regime has disappeared – to explore the comparative roles of objective conditions and subjective mentality in explaining East German unhappiness. Specifically, we propose a mentality explanation of East Germans’ unhappiness on the basis of the prevalence among them of materialist values, unmet aspirations with respect to the welfare state, and dissatisfaction with the liberal democratic system.

We disentangle the influence of circumstances/conditions and mentality by applying – for the first time – the methodology used by Senik (2014) in a cross-national context to the East-West satisfaction gap in Germany. Specifically, we capture circumstances by the region of residence (East vs. West) and mentality by whether an individual is a native of the respective region or has migrated to that region. We differentiate our analysis by the individual East German states, years since unification, birth cohorts, and the length of time a “migrant” lives in her new region of residence.² Exploiting the panel nature of our data, we investigate to what extent within-person changes of mentality contribute to life satisfaction. Furthermore, we investigate the specific roles of materialism, expectations as to the economic role of the state, and satisfaction with the working of democracy in explaining East German unhappiness.

² Our analysis refers exclusively to German natives, not to immigrants from other countries. Hence, the term “migrant” refers to German natives who have moved from East to West or vice versa.

Using 420,132 observations from the German Socio-Economic Panel (SOEP), we find that (controlling for household income, unemployed status and socio-demographic variables) the East-West life satisfaction gap, 1990-2016, amounted to 0.384 points (on an 11-point scale), of which objective circumstances accounted for 0.175 points (45.6 percent) whereas mentality accounted for 0.209 points (54.4 percent). The mentality gap in the overall sample is driven by birth cohorts socialized under communism, the contribution of mentality to the satisfaction gap being 81.2 percent in this cohort group. While the circumstance-related gap diminished steadily over time, the mentality-related gap changed non-monotonically, reflecting different happiness responses of East and West Germans to politico-economic shocks. Within-person changes of mentality are detectable only in special circumstances, in which people appear to have adjusted exaggerated hopes or worries.

We note that East-West and West-East migration within Germany have been studied before. Estimating separate models for East and West Germany, Frijters et al. (2004a) found that movers from the West to the East display lower levels of life satisfaction than those staying in the West whereas movers from the East to the West display higher levels of life satisfaction than those staying in the East. Ruling out reverse causation (in the sense that personality-related intrinsic levels of happiness may influence the decision to migrate or stay), they interpreted the differences found as resulting from East-specific and West-specific circumstances, respectively. Their approach was not designed to investigate the role of mentality differences.

The remainder of the paper is structured as follows. Section 2 discusses the institutional and literature background. Section 3 presents the methodological framework. Section 4 presents and discusses the results. Section 5 concludes.

2. Background and Literature

2.1 Institutional Background

At the end of World War II in 1945, Germany was divided into four occupational zones, American, British and French in the West, and Soviet-Russian in the East. In 1949, the Western zones became the Federal Republic of Germany (FRG) whereas the Soviet zone became the German Democratic Republic (GDR). The political system of the FRG was liberal-democratic, with free competition of political parties, whereas the system of the GDR was characterized by the ruling of the “Socialist Unity Party of Germany”. While the economic system of the FRG was basically private-property capitalism, with strong welfare-state elements, the economy of the GDR was essentially a system of state-property central planning. Due to its Marxist origin, the politico-economic ideology endorsed in the GDR was strongly materialist, emphasizing the importance of material aspects of life.

After the collapse of the Soviet Union and the fall of the Berlin Wall, FRG and GDR were united in October 1990, the new state adopting both the name and the political and economic institutions of the Federal Republic of Germany.

The economies of the FRG and the GDR were characterized not only by different institutional frameworks but different economic outcomes. Notably, up to the end of its existence, the GDR was characterized by both lower per capita income and lower income inequality than the FRG, whereas no such differences existed between the respective parts of Germany before they were separated (Alesina and Fuchs-Schündeln 2007). In addition, Alesina and Fuchs-Schündeln (2007) argue that before the separation the two parts of Germany were very much alike in terms of the political and economic attitudes of their citizens.

2.2 Related Literature

The literature related to this paper refers to the roles of objective conditions and subjective mentality in explaining happiness patterns in Germany and to the role of the “communist legacy” in shaping attitudes and value orientations that make up East Germans’ mentality.

2.2.1 The Satisfaction Gap and Economic Conditions

While there was some convergence of East and West German life satisfaction in the first years after unification, a rather stable gap remained thereafter (Easterlin and Plagnol 2008). Several papers that studied happiness in East and West Germany highlighted the role of economic factors for explaining the gap (Gerlach and Stephan 1996, Frijters et al. 2004a, 2004b, Easterlin and Plagnol 2008, Easterlin 2009, Vatter 2012, Petrunyk and Pfeifer 2016). Both Frijters et al. (2004b) and Easterlin and Plagnol (2008) attributed the initial increase in East German life satisfaction to increases in household income that were largely due to public transfers from the West. According to Easterlin and Plagnol (2008) relative household income (relative to the mean for Germany) was more important for this effect than absolute income.

In addition to income, a major factor underlying the satisfaction gap is unemployment. Vatter (2012) estimated that half of the gap between East and West German regions in 1995-2009 is due to differences in per capita GDP and the level of unemployment, where unemployment is found to be more important than income. According to Gerlach and Stephan (1996), the effect of unemployment is more important for males and younger individuals than for females and older individuals.

In a long-term perspective, spanning the years 1992-2013, Petrunyk and Pfeifer (2016) found that the East-West gap in life satisfaction is reduced from 0.63 to 0.43 (on an 11-point scale) when household income and unemployed status are controlled for.

2.2.2 Happiness, Circumstances, and Mentality

While the bulk of the literature on happiness differentials has focused on differences in objective (mainly economic) conditions, Senik (2014) has emphasized the role of cultural differences in explaining patterns of happiness. She starts from the observation that there are considerable and persistent differences between the happiness levels of countries with similar levels of development, notably the low level of happiness in France in comparison with other West European countries. In explaining cross-national happiness patterns, she invokes a distinction between “circumstances” and “mentality”. By circumstances she refers to the “institutions, regulations and general living conditions that prevail within in a country”, whereas mentality involves the “specific intrinsic attitudes, beliefs and ways of appreciating reality that individuals engrain during their infancy and teenage, via education and socialization instances such as schools, peer groups, firms and organizations” (Senik 2014, 380). In theoretical terms, circumstances are the country-specific arguments of the happiness function, whereas mentality differences involve culturally transmitted differences in how circumstances affect happiness.

In her empirical analysis, she considers a set of seven West European countries, of which Belgium, the Netherlands, Sweden, and Switzerland display happiness levels above average, whereas happiness in France, Germany and Great Britain is below average. Controlling for the usual individual-level correlates, she finds happiness to be significantly related to both national circumstances (captured by country-of-residence dummies) and mentality (captured by whether an individual is a native of the respective country or an immigrant).³ While a significant influence of mentality is found for all seven countries, the contribution of mentality to national (un)happiness

³ See subsection 3.3 for details on the methodology.

is particularly large in the case of France. By contrast, the national satisfaction gap between Germany and the other countries originates mainly in objective circumstances.

With respect to the satisfaction gap *within* Germany, it is clear that basic institutions and regulations – which constitute important dimensions of “circumstances” – are the same in East and West Germany, whereas living conditions (in terms of amenities, infrastructures and public goods) converged only slowly. With respect to mentality, differences between East and West Germany in *long-term* “cultural priming” (by history, language and the fine arts, say) arguably have less importance than in the cross-national context. A probably more important cultural divide refers to political culture, related to a “communist legacy” in East Germany.

2.2.3 *The “Communist Legacy” and “Eastern Mentality”*

Several dimensions have been identified along which “attitudes, beliefs and ways of appreciating reality” (Senik 2014) differ between individuals in “Western” societies and those socialized in ex-communist states. In particular, East Germans were found to have a greater preference for working over being unemployed (Van Hoorn and Maseland 2010) and to display a higher level of materialism, as manifested in the effect of income on life satisfaction being significantly greater among East Germans than West Germans (Frijters et al. 2004a, Van Hoorn and Maseland 2010).⁴ In a similar vein, Friehe and Mechtel (2014) found conspicuous consumption to be more important in East than in West Germany and attributed the difference to the influence of different political regimes.

Another important mentality difference refers to attitudes towards public social policies and aspirations as to the economic role of the “state”. With respect to Germany, Alesina and Fuchs-

⁴ Since income is measured on a logarithmic scale in these studies, this finding is unlikely to reflect decreasing marginal utility of income.

Schündeln (2007) note that “due to 45 years of anti-capitalist indoctrination” East Germans have a profound view that the state is essential for individual well-being. They found this view to be so persistent that it is a matter of generations for former East and West Germans to converge in terms of preferences and attitudes regarding the role of the government in providing economic and social security.

Finally, though not confined to post-communist countries, a further dimension of endogenous, path-dependent differences in political preferences refers to attitudes towards democracy in former dictatorships. In this regard it was found that support of democracy in new democracies is weaker when people had spent less time under democracy, suggesting that trust in the working of liberal-democratic institutions needs time to develop (Fuchs-Schündeln and Schündeln 2015).

The evidence on important mentality differences between ex-communist societies and Western societies concerning materialist values, economic and social security, and democratic institutions suggests that such differences may play a role in explaining East German unhappiness. Consistent with this hypothesis, Noll and Weick (2010) found worries about the retirement system as well as trust in institutions such as the legal system and the parliament to significantly contribute to the East-West satisfaction gap in Germany.

3. Empirical Framework

3.1 Data and Sample Characteristics

The data used in this paper comes from the German Socio-Economic Panel (SOEP), one of the most widely used panel data sets in the subjective well-being literature. The SOEP is a panel survey based on a multi-stage random design with yearly re-interviewing (Wagner et al., 2007).

Annual waves of the survey involve more than 20,000 individuals aged 16 and over in about 11,000 households. We use SOEP version 33.

The dependent variable in our well-being regressions is life satisfaction (LS), obtained from the answers to the following question: “How satisfied are you at present with your life, all things considered? Please respond using the following scale, where ‘0’ indicates *not at all satisfied* and ‘10’ indicates *completely satisfied*.” Independent variables of main interest are indicator variables for the region of residence (East or West Germany) and for whether an individual is a native of or a mover to the respective region. East Germany is defined as comprising the former GDR except for East Berlin. Berlin is treated as either belonging to West Germany or, in robustness checks, omitted from the analysis. Control variables are gender, marital status, age, level of education, size and composition of the household, household income, and unemployed status.

The data set used in this paper refers to 1990 – 2016 and includes 420,132 observations for 54,751 individuals. Immigrants from outside of Germany were excluded from the data set. The summary statistics of all variables are displayed in Table A1 in the appendix, broken down by East and West Germany.⁵

3.2 Identification Strategy and Econometric Models

Our empirical strategy closely follows Senik (2014) by applying her approach to East and West Germany instead of several European countries. Following her reasoning, we argue that if the effect of living in the East or West boiled down to the objective circumstances of those regions (such as amenities, infrastructures and public goods) and if the circumstances were evaluated in the same way irrespective of individuals’ origin (East or West), the ranking of the regions in terms of life

⁵ In our main analysis, West Germany is defined to include Berlin. All of our results are preserved (and strengthened) when Berlin is omitted from the analysis.

satisfaction would be the same whether evaluated by “natives” of the region or by “immigrants”.⁶ Then, in life satisfaction regressions, controlling for the region of residence (East versus West) and the migration status of individuals (native versus immigrant) as well as their socio-demographic profile, the coefficient on the interaction terms between region dummies and migration status would not be statistically significant. If, on the other hand, the coefficients on these interaction terms are statistically significant, this indicates mentality differences and the coefficients can be used to decompose East-West differences in life satisfaction in terms of external circumstances versus internal psychological attitudes.

The identification strategy thus relies on the assumptions that (i) all residents of region r (East Germany, West Germany) *experience* (are exposed to) the same circumstances, irrespective of whether this is their region of origin or not, and (ii) region-specific circumstances are *evaluated* (in terms of satisfaction) differently by natives of and migrants to the respective region due to differences in mentality.

Since we consider only two regions (East and West Germany), it is sufficient for identification to choose one region as the region of reference and to estimate only one equation. Using West Germany as the reference region, the benchmark estimation model is stated as follows:

$$LS_{irt} = \text{constant} + \alpha \text{Migrant}_{it} + \beta \text{East}_{it} + \gamma \text{Migrant}_{it} * \text{East}_{it} + \delta X_{irt} + \varepsilon_t T_t + u_{irt} \quad (1)$$

where LS_{irt} denotes life satisfaction of individual i in region r and year t . *Migrant* is a time-variant dummy variable that (at t) takes the value 1 if (previous to t) the individual has migrated to her current region of residence (from the respective other region) and 0 otherwise. *East* is a dummy

⁶ Recall that the term “immigrant” refers to Germans who have moved from East to West or vice versa. Immigrants from outside of Germany are disregarded throughout our analysis.

variable that (at t) takes the value 1 if the individual's current region of residence is East Germany and 0 otherwise. Both *Migrant* and *East* are thus time-variant for individuals who have moved between the regions and time-invariant for those who have not. We checked that no individual in the sample moved between regions more often than once. The interaction term *Migrant*East* takes the value 1 if (in the year of observation) the individual is both a migrant and lives in the East, and 0 otherwise. In other words, $Migrant*East = 1$ for individuals with West German origin living in East Germany (at t), whereas $Migrant*East = 0$ for all other cases.⁷ X is a vector of socio-demographic controls (gender, marital status, age, education level, household size, number of children in the household, unemployed status, log of household income). T denotes year-fixed effects, and u is the error term.

Given the definition of the variables *Migrant*, *East* (and hence *Migrant*East*), the reference group in our regressions consists of West Germans living (at the time of observation) in West Germany ($Migrant = East = 0$). The coefficient α measures the satisfaction gap between Easterners living in the West ($Migrant = 1, East = 0$) and the reference group. Given the identifying assumptions stated above, significance of this coefficient indicates that Easterners and Westerners living in the West display different levels of satisfaction in spite of being exposed to the same circumstances, that is, it indicates the existence of mentality differences.

The idiosyncratic satisfaction difference between individuals living in West Germany ($East = 0$) and those living in East Germany ($East = 1$) is given by $\beta + \gamma$. Under identifying assumption (i), this region-related difference is attributable to differences in circumstances. It can be differentiated by whether the individual is an East German native ($East = 1, Migrant = 0$, hence $Migrant*East = 0$) or a mover to East Germany ($East = 1, Migrant = 1$, hence $Migrant*East = 1$).

⁷ Alternatively, we could have used individuals' place of residence in 1989 to separate people of Eastern and Western origin, but that approach would not be feasible for those born after 1989.

Specifically, the coefficient on *Migrant*East*, γ , measures the difference in satisfaction between migrants to the East (Westerners) and East German natives. Conversely, $-\gamma$ measures the difference in satisfaction between East German natives and Westerners living in the East. Under identifying assumption (ii), the difference in satisfaction between native Easterners and Westerners living in the East is attributable to a difference in mentality.

Overall, consistent with Senik (2014), $\beta + \gamma$ is the East-West satisfaction gap attributable to different circumstances, whereas $-\gamma$ is the satisfaction gap between Easterners and Westerners attributable to mentality. From the point of view of “East German Unhappiness”, the latter is our main indicator of mentality. It should be recalled, however, that specification (1) includes another coefficient that captures a mentality difference, the coefficient α . If both α and $-\gamma$ are significant, it constitutes an endorsement of the role of “Eastern” mentality.

Specification (1) is the benchmark regression in our empirical analysis. We extend it by including interaction terms that allow us to investigate whether the effects of circumstances and mentality have changed over time and whether they differ by birth cohorts and, in the case of migrants, by the number of years since migration. Moreover, we check whether the effects of circumstances and mentality differ with respect to the various East German states.

In our analysis we do not differentiate between East and West Berlin and treat Berlin as belonging to the West. To the extent that there exist differences in circumstances and mentality between the two parts of Berlin, this implies that our estimates of circumstance and mentality effects are lower bounds. As a robustness check, we will drop Berlin from the analysis. In further robustness checks we vary the control variables.

Following Senik (2014) as well as much of the well-being literature, we estimate our models using least squares. This is advisable since ordered probit or logit estimators are problematic in models that include interaction terms (Ai and Norton 2009). Moreover, we abstain

from estimating individual fixed-effects models since fixed effects would absorb all unobserved inter-personal differences including the mentality differences that we wish to study. In some of our regressions we do, however, exploit the panel nature of the data, using balanced panels to separate within-person well-being changes from changes in cohort composition. With respect to exogeneity we note that Frijters et al. (2004a) found no indication that moving between East and West may be driven by individual-specific unobserved factors of life satisfaction. We minimize the risk of unobserved heterogeneity by using the battery of controls that have been found to be related to life satisfaction (Dolan et al. 2008). We cluster standard errors at the level of the individual.

4. Results and Discussion

4.1 Basic Regressions

Table 1 displays results for the basic specification, equation (1). With respect to the control variables, we find the usual results for industrialized countries, namely that females are significantly more satisfied than males, married individuals are more satisfied than singles whereas separated and divorced individuals are less satisfied, younger and older individuals are more satisfied than those of intermediate age, and satisfaction increases in the level of education and household income and is negatively related to unemployed status. Moreover, satisfaction decreases in household size and increases in the number of children.

<Table 1: Basic Regressions>

With respect to our variables of main interest, regression A shows a significantly negative coefficient on the variable *Migrant*. As explained above, this indicates a mentality effect in the sense that East Germans living in the West are less satisfied than native West Germans, the gap

amounting to 0.228 points on the 11-point scale. The coefficients on the variable *East* is significantly negative (-0.384) whereas the coefficient on the interaction term *Migrant*East* is significantly positive (0.209). This indicates that the level of satisfaction in the East is lower by 0.175 points (-0.384 + 0.209) than in the West. However, as indicated by the coefficient on the interaction term, Westerners living in the East are 0.209 points more satisfied than East German natives. Following Senik (2014), the East-West satisfaction gap attributable to circumstances thus amounts to -0.175 points (45.6 percent) whereas the gap attributable to mentality amounts to -0.209 points (54.4 percent).

As noted in the preceding section, the coefficient on *Migrant* is an indicator of the mentality gap between East and West Germans living in West Germany. We find this coefficient (-0.228) to be of a similar magnitude as the mentality gap in East Germany (-0.209) and in fact not significantly different from it. Both measurements of the mentality gap suggest a dominance of mentality over circumstances in the satisfaction gap between East and West Germany.

Regressions B and C in Table 1 serve to check the robustness of these findings with respect to the treatment of Berlin and the set of control variables. In regression B, Berlin (which as a default is treated as belonging to West Germany) is excluded from the sample. This reduces the sample from 420,132 to 403,603 observations. This change implies that our coefficients of main interest retain their signs and significance but increase in magnitude. Mentality now accounts for 66.8 percent (-0.274/-0.410) of the satisfaction gap. The difference between regressions B and A is consistent with the idea that in Berlin the mentality gap between Easterners and Westerners is smaller than in the rest of Germany.

In the remainder of the paper, we return to treating Berlin as belonging to West Germany. In the light of the results of regression B, we note that this strategy is likely to produce a lower bound on the East-West mentality difference.

In regression C we expand the set of control variables to include self-reported health status. This reduces the number of observations to 388,368 since the health question was asked only 1994 onwards. As expected, life satisfaction is significantly negatively related to poor health. The importance of the health status for life satisfaction manifests itself by an increase of the coefficient of determination (R^2) from 11 percent to 27 percent. Including the health status leaves the sign and significance of our variables of interest unaffected. Interestingly, the coefficients on *Migrant* and *Migrant*East* increase in magnitude in comparison to regression A whereas the coefficient on *East* decreases. The latter suggests that the general health status may be one of the circumstances that differentiate the East from the West. The mentality gap now accounts for 65.6 percent (-0.240/-0.366) of the overall satisfaction gap.

The next regressions in Table 1 include indicators of materialist attitude, appreciation of democratic institutions, and aspirations as to the state's responsibility for economic and social security. As seen in regression D, including an indicator of materialism ("Being able to afford things for myself." Response options 1 = "very important" to 4 = "not at all important") implies that the coefficients on *Migrant* and *Migrant*East* drop in both size and significance. Including satisfaction with existing democratic institutions ("How satisfied are you with democracy as it exists in Germany?" Response options 0 = "completely dissatisfied" to 10 = "completely satisfied") implies that the coefficients on *Migrant* and *Migrant*East* become insignificant, the variable itself attracting a significantly positive coefficient (regression E). Regressions F - J include indicators of who (1 = "only the state" to 5 = "only private forces") is responsible for providing financial security in various areas (when unemployed, when sick, for the family, when old, when needing care). Following Alesina and Fuchs-Schündeln (2007), we grouped the first two answer categories together and created five dummy variables for state preference which take on the value one if the respondent answered "only the state" or "mostly the state" for the respective area, and zero

otherwise.⁸ It is seen that the coefficients on *Migrant* are not much affected by including these indicators, whereas the coefficients on *Migrant*East* drop in size and become insignificant.⁹ The state preference variables themselves attract significantly negative coefficients, indicating that individuals who demand more security from the state are less satisfied.

We thus conclude that once we control for materialist attitude, satisfaction with democracy, and preferences about financial responsibility of the state, the coefficient measuring the mentality-related satisfaction gap between East and West Germans (coefficient on *Migrant*East*) drops in size and significance or becomes insignificant. This suggests that the mentality-related satisfaction gap may in fact be related to East Germans' materialist attitude and their unmet aspirations concerning democratic institutions and the welfare state. The difference in attitudes and aspirations is arguably the result of socialization under different politico-economic regimes (Alesina and Fuchs-Schündeln 2007, van Hoorn and Maseland 2010, Fuchs-Schündeln and Schündeln 2015).

4.2 Variation across East German States

The analysis up to this point has treated East Germany as a homogeneous unit. We now differentiate East Germany by the various East German states (*Bundesländer*). This means that in equation (1) we use a set of state indicator variables instead of the indicator variable *East* as well as interaction terms between the state indicators and *Migrant*.

As Table 2 shows, the coefficients on the East German state indicator variables are all negative and significant, ranging from -0.283 (Mecklenburg-Vorpommern) to -0.446 (Sachsen-Anhalt). There are thus significant East-West satisfaction gaps in all East German states. The

⁸ These variables are available only for 1997 and 2002 (see Alesina and Fuchs-Schündeln 2007), which implies that the number of observations drops to somewhat below 30,000.

⁹ Since the regressions D – J are based on different samples than the benchmark regression, A, we re-estimated the benchmark regression on these respective samples. In these exercises the coefficients on *Migrant*East* were larger and more significant than in D-J.

interaction terms of the state indicators and *Migrant* are positive for all five states and (at least marginally) significant for three of them (Brandenburg, Sachsen, Sachsen-Anhalt), indicating the existence of significant East-West mentality gaps in these states. The significant coefficients range from 0.179 (Sachsen) to 0.337 (Sachsen-Anhalt). The share of the mentality gap in the overall satisfaction gap amounts to 48.9 percent (-0.225/-0.460), 54.1 percent (-0.179/-0.331), and 75.6 percent (-0.332/-0.446) in Brandenburg, Sachsen, and Sachsen-Anhalt, respectively. In Mecklenburg-Vorpommern and Thüringen, the satisfaction gap is attributable to circumstances only as the mentality gap is not statistically significant.

<Table 2: Variation across East German States>

The latter finding is interesting since these two states are bordering to West Germany whereas Brandenburg and Sachsen (for which a significant mentality gap has been found) are not. The finding is consistent with the idea that greater proximity is associated with a smaller satisfaction gap, a hypothesis for which previous evidence is mixed (Frijters et al. 2004a, Vatter 2012). The present evidence for Sachsen-Anhalt, however, is inconsistent with the proximity hypothesis as this state displays the largest mentality gap in spite of bordering to West Germany.

The results discussed up to this point suggest a considerable role for mentality differences in explaining the satisfaction gap between East and West Germany. That a mentality difference can be found in the majority of East German states is consistent with the idea of a common cultural legacy of the ex-GDR. Further evidence on whether the mentality gap is related to a particular style of socialization and education under the communist regime will be provided in the next subsections which focus on time and cohort effects.

4.3 Time and Cohort Effects: Initial Findings

Our first question with respect to changes over time is whether the mentality gap between “migrants” and “natives” changes with the length of time migrants have lived in their new region of residence. To address this question, we replace the variable *Migrant* with a set of dummy variables that indicate whether migration took place 1-5 years ago or more than 5 years ago (*Migrant(1-5)* and *Migrant(>5)*), respectively. Similarly, the interaction term with *East* is split according to the time since migration (1-5 years vs. more than five years). As seen in column A of Table 3, the coefficients on *Migrant(1-5)* and *Migrant(>5)* are both negative and significant, whereas their interactions with *East* are both positive and significant. Interestingly, the coefficients for long-term immigrants (>5 years) are of greater magnitude than for those who arrived more recently. The satisfaction gap between natives of and movers to the respective regions thus increased over time. This indicates a backlash of one’s original mentality, possibly related to exaggerated aspirations that got frustrated after experiencing life under the new circumstances.¹⁰

<Table 3: Time and Cohort Interactions>

Model B in Table 3 augments the basic specification by including the number of years since unification (1990) and their interaction with our variables of main interest. With this modification, the coefficients on the un-interacted variables *Migrant*, *East* and *Migrant*East* retain their signs and significance, but their magnitudes increase. In particular, the coefficient on *East*, which now indicates the initial East-West gap (by 1990), amounts to -0.657 points. It is much larger than the average gap (over 1990-2016) found in model A in Table 1 (-0.385). Of the initial gap (-0.657), -

¹⁰ This finding is similar to the finding of Alesina and Fuchs-Schündeln (2007) that Easterners living in the West become more supportive of state intervention the longer they have lived in the West.

0.379 points (the sum of the coefficients on *East* and *Migrant*East*) are attributable to circumstances, much more than on average over 1990-2016 (-0.175).

Consistent with this, the coefficient on the interaction of *East* with the number of years since 1990 (*YS90*) is significantly positive, amounting to 0.019. This suggests that over the time span considered (1990-2016) the satisfaction gap decreased by 0.513 points ($27*0.019$), bringing the gap down from -0.657 to -0.144. The interaction terms of *YS90* with both *Migrant* and *Migrant*East* are insignificant.

Insignificance of these interaction terms may have several reasons. One reason is that changes over time of the mentality-related satisfaction gap may occur in a non-linear fashion. Checking this possibility warrants a more detailed investigation of the dynamics of the mentality gap. This will be undertaken in the next subsection.

Before turning to a more detailed analysis of the dynamics of East German unhappiness, we have a first look at cohort effects, since the cohort composition can be supposed to be a major contributor to happiness dynamics in East and West Germany. Regression C in Table 3 introduces groups of birth cohorts into the analysis. We consider the group of birth cohorts 1945-1970 as comprising those individuals who have undergone a different socialization in East and West Germany, respectively (Van Hoorn and Maseland 2010). Those born earlier than 1945 or later than 1970 have only partly or not at all been socialized under different regimes.

Regression C in Table 3 includes indicator variables for those born before 1945 ($C<1945$) and those born after 1970 ($C>1970$) as well as their interactions with our main variables of interest, taking the cohorts 1945-1970 as the reference group. The regression shows us that for this reference group the coefficients on *Migrant* and *Migrant*East* are of considerably greater magnitude than in the baseline regression (regression A in Table 1). Specifically, the coefficient on *Migrant* amounts to -0.271 instead of -0.228, and the coefficient on *Migrant*East* to 0.321 instead of 0.209. This

provides an initial indication that the mentality gap between Easterners and Westerners may be particularly large for those that have undergone a communist as opposed to liberal Western education. We also see that the interaction term of $C > 1970$ with *East* attracts a significantly positive coefficient, amounting to 0.193. The East-West satisfaction gap is thus significantly smaller (by 46.5 percent) for our latest cohort group than for the earlier birth cohorts (see Petrunyk and Pfeifer 2016 for a similar finding). The interaction terms of $C < 1945$ and $C > 1970$ with *Migrant* and *Migrant*East* are, however, insignificant. If the mentality gap is indeed cohort-dependent, this dependence must be more complex than is captured in regression D. The next subsection focuses on this possibility.

4.4 Time and Cohort Effects: Detailed Analysis

The preceding subsection has provided some initial evidence on time and cohort effects, looking at both effects separately. In reality, time and cohort effects may be interrelated, as different cohorts (with their presumed different mentalities) may have responded differently to certain exogenous shocks (events) happening at certain times.

Table 4 investigates the role of circumstances and mentality in different time periods, groups of birth cohorts, and combinations thereof. We consider time windows of five years (except for the period 2010-2016) and, as above, the cohort groups $C < 1945$, $C 1945-70$, and $C > 70$. The top panel of Table 4 shows the results of our basic regression for the various time periods, not differentiating between cohorts, whereas the leftmost column (column A) shows results differentiated by cohort group but not time period. The top panel of column A reproduces our baseline regression, regression A in Table 1.

<Table 4: Regressions Differentiated by Time Periods and Cohort Groups>

Looking at the various time periods undifferentiated by cohort (top panel) we note that the coefficient on *East* is significantly negative in all time periods but steadily decreases in magnitude, from -0.623 (1990-94) to -0.193 (2010-16). This is consistent with the time evolution of the East-West gap implied by the interaction of *East* with years since unification (regression C in Table 3), as discussed before. In contrast to this steady decrease, the coefficients on *Migrant* and *Migrant*East* show some fluctuation over time. The former is insignificant in 1990-94 and becomes significantly negative thereafter, assuming the greatest magnitude in 1995-99 (-0.256) and 2005-09 (-0.255) and dropping in 2010-16 (to -0.189). The coefficient on *Migrant*East* is significantly positive in 1990-99, rising in magnitude from 1990-94 (0.257) to 1995-99 (0.308), and becoming insignificant thereafter (except for 2005-09, where the coefficient is marginally significant, amounting to 0.185). These results suggest that the mentality gap (as measured by the coefficients on *Migrant* and *Migrant*East*) is particularly important in 1995-99 and 2005-09, an issue to which we shall return later.

We next consider results differentiated by cohort group, but not by time period, as shown in column A. With respect to the variable *East*, we find its coefficient to be significantly negative for all cohort groups, the magnitude being largest for $C < 1945$ (-0.491) and smallest for $C > 1970$ (-0.264) while the coefficient for $C 1945-70$ takes an intermediate value (-0.367). The overall East-West difference in satisfaction thus decreases as more recent cohorts are considered (as was already found in Table 3).

This result for the overall East-West satisfaction gap does not apply to its mentality dimension. As indicated by the coefficients on *Migrant*East*, a mentality difference between Easterners and Westerners living in East Germany is significant only in the cohort group 1945-70, not for those born before 1945 or after 1970. The size of the coefficient (0.298) is very similar to

that of the corresponding coefficient in regression D in Table 3 (0.321). For this cohort group, the mentality gap accounts for 81.2 percent $(-0.298/-0.367)$ of the overall satisfaction gap. It should be noted, however, that the insignificance of the mentality gap in cohorts other than 1945-70 applies only to individuals living in East Germany. In West Germany, we find significant mentality gaps in all tree cohort groups (coefficient on *Migrant*).

When we combine the differentiation by cohorts with that by time periods, the following results stand out. First, the decrease of the overall satisfaction gap over time (as indicated by the coefficient on *East*) applies to all cohort groups, the gap decreasing most strongly in the latest cohort group (from -0.785 in 1990-94 to -0.115 in 2010-16) and least strongly in the earliest group (from -0.526 to -0.416). Second, the insignificance of the mentality gap for $C < 1945$ (coefficient on *Migrant*East*) applies to all time periods whereas its insignificance for $C > 1970$ does *not* apply to 1995-99 and 2000-04. Third, for the cohort group 1945-70, despite its significance on average, that is, over the entire time frame (column A), the mentality gap (coefficient on *Migrant*East*) is actually significant only in 1990-94, 1995-99, and 2005-2009. Fourth, the mentality gap in the West (measured by the coefficient on *Migrant*) tends to be significant and large mainly in the time periods 1995-1999 and 2005-09, for the cohorts born before 1970 but not later.

Overall, while the East-West gap in life satisfaction decreased steadily over time, this is mainly due to a convergence in circumstances. The role attributable to mentality differences changed non-monotonically over time, and the change was different in different groups of birth cohorts. Specifically, the contribution of the mentality gap to the overall satisfaction gap (coefficient on *Migrant*East*) was large in 1990-94, 1995-99 and 2005-09, particularly so for those born in 1945-70. Specifically, in 1995-99 and 2005-09, the mentality gap for $C < 1945-70$ (coefficient on *Migrant*East*) is practically indistinguishable from the overall gap (coefficient on *East*).

The latter results suggest a special role for socialization in explaining how life satisfaction has responded to certain external shocks. Shocks that come to mind are the unification itself, the creation of the European Monetary Union, leading to the Deutschmark being replaced with the Euro, the welfare and labor market reforms of the *Agenda 2010*, and the financial crisis of 2008-09 and related concern about fiscal and monetary stability. In the light of the results described above, these events may have affected the life satisfaction of individuals with different socialization-dependent mentality differently in the following ways.

With respect to 1990-94, comparing the results for the three cohort groups suggests that Easterners and Westerners living in the East valued unification differently (the Easterners more negatively so) if born in 1945-70, but not otherwise (see next subsection for more detail). This difference in valuation persisted in 1995-99, possibly reinforced by worries about the upcoming abandonment of the Deutschmark – worries that were much stronger among Easterners than Westerner but were attenuated after the actual introduction of the Euro (Isengard and Schneider 2002).¹¹ The years 2005-2009 then saw a return of the mentality gap in East Germany, again restricted to those born in 1945-70. A possible explanation for this lies in the welfare and labor market reforms (*Agenda 2010*) that became effective by 2005, leading to reduced welfare payments and labor market protection. Given that individuals socialized in the GDR exhibit a stronger preference for economic and social security than those socialized in the West (Alesina and Fuchs-Schündeln 2007), it is intuitive that their satisfaction responded more strongly to the reforms than the satisfaction of those brought up in the West. Similar reasoning applies to differences between Easterners and Westerners in concern about the financial crisis of 2008-09.

¹¹ In explaining these worries, Isengard and Schneider (2002) argue that citizens of the GDR had been longing for the Deutschmark as incorporating prosperity and financial stability.

4.5 Within-Person Changes

While the above analysis considered changes across time windows of the circumstance and mentality effects, it is clear that changes over time can happen *within* time windows and that such changes are the effect of two phenomena: changes in the cohort composition (within time windows) and within-person changes in attitudes and values. This subsection sets out to disentangle these effects, making use of the panel structure of our data. To this purpose, we extend the baseline specification that includes *Migrant*, *East* and *Migrant*East* with interactions of these variables with the number of years since unification (*YS90*), and estimate the extended model for the same cohort/time combinations shown in Table 4 using a balanced panel in each case.¹² By using balanced panels, we keep the person composition fixed such that interactions with *YS90* measure within-person changes (attitude changes) over time.

We find that out of the 15 cohort/time combinations only five exhibit significant interaction terms with *YS90*. These combinations are C<1945/1995-99, C<1945/2005-09, C1945-70/1990-94, C>1970/1990-94, and C>1970/2010-16. The respective results are shown in Table 5.

<Table 5: Within-person Changes>

With respect to C<1945 in both 1990-94 and 2005-09 we find very large, negatively significant coefficients on *Migrant* and positively significant coefficients on *YS90*Migrant*. The same applies to *Migrant*East* and *YS90*Migrant*East*. There are thus large mentality gaps at the start of the respective time periods which decrease over time. Since we keep the respective person compositions fixed, decreasing gaps represent within-person changes of the satisfaction function.

¹² Using five-year time windows (except for 2010-16) seems appropriate given that the average panel length is 7.7 years.

If we assume that East-West mentality differences in 1995-99 and 2005-09 are related to different worries about specific events (the European Currency Union and the welfare reforms, respectively) these results suggest that those worries differed largely at the beginning of the respective time periods and converged thereafter.

In contrast to $C < 1945$, we see no adjustment to these events in individuals born in 1945-70. These cohorts, by contrast, display a large degree of adjustment immediately after the unification, in 1990-94. For this cohort group, the coefficient on *Migrant* is significantly *positive*, indicating that initially East Germans who have moved to the West are more satisfied than the native Westerners. This difference, which amounts to 0.675 points, falls by 0.199 points per year (significantly negative coefficient on $YS90 * Migrant$), leading to the familiar gap between Easterners and Westerners by the end of this period. As indicated by the significant coefficient on $Migrant * East$ (2.059) and the marginally significant coefficient on $YS90 * Migrant * East$ (-0.300) there is initially a large mentality gap between Easterners and Westerners in East Germany which narrows down within 1990-94.

An indication of similar adjustments within 1990-94 can be found in individuals born after 1970. With respect to this cohort group we find no significant initial gap between Easterners and Westerners living in the West (insignificant coefficient on *Migrant*), but a build-up of a gap up to 1994. This adjustment of attitudes is, however, estimated with relatively low precision (the coefficient on $YS90 * Migrant$ being significant only at ten percent).¹³

Finally, the cohort group $C > 1970$ living in East Germany displays a within-person adjustment in 2010-16 in the sense that a large satisfaction gap at the beginning of this period narrowed over time. An explanation of this finding may be that Easterners of this cohort group

¹³ We do not have data for Westerners of this cohort group living permanently in the East in 1990-94. There are thus no estimates for $Migrant * East$ and its interaction with $YS90$.

(aged 16 to 40 years at the beginning of this period) were initially worried about the consequences of the financial crisis (Euro crisis) for monetary and fiscal stability and adjusted their concerns as those consequences turned out to be less severe than expected.

We note that the results of this subsection are subject to the caveat that the balanced panels on which the results rely are not necessarily representative. In spite of this caveat, this exercise suggests, in the first place, that there are few indications of within-person adjustments of the happiness function over time (as far as the gap between Easterners and Westerners is concerned). If adjustments took place, they refer to time periods characterized by external shocks that may have triggered either hopes or worries which later turned out to be exaggerated. Except for these cases, changes in the mentality gap between Easterners and Westerners seem to be attributable mainly to changes in the cohort composition.

4.6 Summary and Discussion

Similar to previous literature we found a significant satisfaction gap between East and West Germany as well as a declining trend in this gap. Specifically, over the period from German unification (1990) to 2016 the gap in 11-point life satisfaction amounted to 0.384 points on average, decreasing from 0.623 points in 1990-94 to 0.193 points in 2010-16.

Unlike previous literature we were able to decompose the overall gap into a gap attributable to differences in objective circumstances in East and West Germany (such as amenities, infrastructures and public goods) and a gap attributable to mentality differences between individuals socialized in the two parts of the country.¹⁴ On average over the entire time period we found both the circumstance-related gap and the mentality-related gap to be statistically and

¹⁴ Some of the previous literature considered individuals that have moved from East to West Germany (e.g. Frijters et al. 2004b) but made no attempt at systematically differentiating circumstance-related and mentality-related components of the East-West satisfaction gap in Germany.

economically significant, the mentality-related gap contributing 54.4 percent to the overall satisfaction gap. Both the circumstance-related and the mentality-related gap were found to exist not just between East and West Germany overall, but between the majority of East German states and West Germany. The mentality-related gap was found to be related to differences in aspirations concerning democratic institutions and the welfare state, consistent with the existence of a specific cultural legacy of the former GDR.

Differentiating individuals that were socialized in either the GDR or the FRG, respectively (birth cohorts 1945-70) from individuals that experienced no or only partially different socialization (individuals born before 1945 and after 1970), we found the mentality-related gap in East Germany to exist only in the cohort group 1945-70. For these individuals, the mentality-related gap amounts to 81.2 percent of the overall satisfaction gap. For those living in West Germany, we found significant mentality-related satisfaction gaps in all three cohort groups. A possible explanation for this may relate to the frequently-voiced complaint of East Germans in West Germany about a lack of respect and social recognition on the part of West Germans.

While the overall satisfaction gap diminished steadily over the entire time horizon (in all three cohort groups), the mentality-related gap showed some fluctuation over time. Specifically, the mentality gap was large in periods that may have caused worries over exogenous shocks such as the creation of the European Currency Union (in the late 1990s) and the welfare and labor market reforms of the *Agenda 2010* (becoming effective by 2005), while being insignificant in the years 2010 onwards. Moreover, the mentality-related satisfaction gap in these periods was largest among those who had wholly or partially undergone different socializations.

In the periods characterized by large mentality-related satisfaction gaps, we found evidence consistent with the idea that individuals adjusted exaggerated hopes or worries as the real-world consequences of the underlying shocks became visible. Except for such periods we found no

evidence of within-person adjustments of mentality. Long-term dynamics of the mentality-related satisfaction gap thus seem to be predominantly the result of changes in the cohort composition, combined with the emergence of shocks that individuals from different cohorts evaluated differently. Persistence of socialization-related mentality is also supported by the finding that the satisfaction gap between natives of and movers to the East and West, respectively, increased rather than decreased with the number of years since migration.

In addition to decomposing the East-West satisfaction gap into a circumstance-related and a mentality-related component, our analysis differs from previous literature in that the latter largely focused on economic factors, such as income and unemployment. In our analysis, we control for the income level and unemployed status. The East-West difference in circumstances as well as mentality-related differences in the happiness evaluation of those circumstances thus do not refer to actual income and employment status. If these economic factors play a role, in terms of differences in evaluation, it is through expectations (hopes or worries) and aspirations concerning them.

With respect to values and attitudes it was found previously that East and West Germans differ with respect to their evaluation of material aspects of life (Van Hoorn and Maseland 2010), an independent national currency (Isengard and Schneider 2002), and their aspirations concerning economic and social security provided by the state (Alesina and Fuchs-Schündeln 2007). Our finding of large mentality gaps precisely in times in which these values and aspirations may be perceived as being at risk are consistent with such differences in values and attitudes. As noted above, such mentality differences exist predominantly between individuals that have been socialized differently, in the GDR and the FRG, respectively.

Our decomposition of the overall satisfaction gap into a circumstance-related and a mentality-related component sheds new light on the dynamics of the overall satisfaction gap. As

noted by Easterlin and Plagnol (2008), the satisfaction gap decreased in the first years after unification and remained stable and sizeable thereafter. In the light of our results, this can be explained in terms of a steady decrease of the circumstance-related gap combined with mounting concern among Easterners with respect to the European Currency Union from the mid-1990s onwards

Overall, our results suggest that, while the circumstance-related satisfaction gap between East and West Germany diminished steadily since German unification, mentality differences due to different socialization under different political and economic regimes are more persistent, exhibiting little indication of intra-personal adjustment. This suggests that any further closing of the mentality-related satisfaction gap is more a matter of demographic than of individual psychological change.

5. Conclusions

The persistent satisfaction gap between East and West Germany has been an issue of concern in both the academic and the political sphere. Researchers have been puzzled by the finding that, after a convergence of happiness in the early years after unification, the gap has proved to be stable and sizeable thereafter. Politicians have been eager to proclaim the target of “equal living conditions” as a means of achieving an equalization of happiness levels.

This paper has shown that an equalization of living conditions may be necessary but not sufficient for closing the satisfaction gap, as individuals socialized in the former GDR display considerably different happiness responses to given circumstances than individuals socialized in the West. In particular, our results are consistent with the idea that Easterners’ happiness has responded more negatively to the forthcoming abolishment of the Deutschmark in the late 1990s, the welfare and labor market reforms around 2005, and the financial crisis of 2008-2009 than the

happiness of Westerners. Mentality-related divergence of worries about these politico-economic shocks may have neutralized the effect of a steady decrease of the circumstance-related satisfaction gap, such that the overall gap remained fairly stable.

A difference in happiness responses to the European Currency Union, labor market liberalization, and the financial crisis is consistent with East Germans' preference for state-provided economic and social security found in previous research and corroborated in the present paper. That no mentality-related satisfaction gap is detectable in the years after the financial crisis may suggest that the upturn of the German economy from 2009 onwards satisfied East Germans' preference for security and stability. Provided that economic and social stability are sustainable, the specific East German unhappiness may come to an end as conditions improve further.

While this paper focused on the satisfaction gap between East and West Germany, extensions of this research in several directions are conceivable. One is to decompose happiness differences between former communist countries and Western countries into their circumstance-related and mentality-related components, thus shedding more light on whether such cross-national satisfaction gaps also constitute a mental "communist legacy". Another is to decompose East-West differences (within Germany and beyond) in attitudes towards issues such as environment, migration, and politics more generally into these components.

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Table 1: Main Estimation Results

VARIABLES	A Basic	B Berlin excluded	C Health included	D Materialism	E Democracy	F State Task Unemployed	G State Task Sick	H State Task Family	I State Task Old Age	J State Task Care
Migrant	-0.228*** (0.054)	-0.291*** (0.057)	-0.278*** (0.046)	-0.155** (0.063)	-0.111 (0.074)	-0.236** (0.094)	-0.225** (0.094)	-0.229** (0.094)	-0.232** (0.094)	-0.242*** (0.094)
East	-0.384*** (0.016)	-0.410*** (0.016)	-0.366*** (0.013)	-0.351*** (0.018)	-0.113*** (0.024)	-0.421*** (0.026)	-0.412*** (0.026)	-0.411*** (0.026)	-0.402*** (0.026)	-0.414*** (0.026)
Migrant*East	0.209*** (0.072)	0.274*** (0.075)	0.240*** (0.061)	0.136* (0.081)	0.046 (0.100)	0.159 (0.127)	0.141 (0.127)	0.155 (0.127)	0.138 (0.127)	0.157 (0.127)
Poor Health			-0.812*** (0.006)							
Materialism				0.017 (0.011)						
Satisfaction with Democracy					0.198*** (0.004)					
State Task: Unemployed						-0.101*** (0.021)				
State Task: Sick							-0.129*** (0.021)			
State Task: Family								-0.157*** (0.021)		
State Task: Old Age									-0.212*** (0.021)	
State Task: Care										-0.144*** (0.020)
Log(Net Income)	0.705*** (0.013)	0.691*** (0.013)	0.530*** (0.011)	0.705*** (0.016)	0.587*** (0.021)	0.710*** (0.025)	0.704*** (0.025)	0.713*** (0.025)	0.695*** (0.025)	0.710*** (0.025)
Unemployed	-0.859*** (0.022)	-0.848*** (0.022)	-0.692*** (0.020)	-0.858*** (0.033)	-0.754*** (0.049)	-0.761*** (0.052)	-0.766*** (0.052)	-0.758*** (0.052)	-0.763*** (0.052)	-0.761*** (0.052)
Female	0.068*** (0.013)	0.067*** (0.013)	0.106*** (0.011)	0.050*** (0.014)	0.065*** (0.018)	0.077*** (0.022)	0.078*** (0.022)	0.075*** (0.022)	0.074*** (0.022)	0.073*** (0.022)
Married	0.138*** (0.019)	0.136*** (0.020)	0.204*** (0.016)	0.159*** (0.022)	0.196*** (0.030)	0.186*** (0.037)	0.188*** (0.037)	0.187*** (0.037)	0.191*** (0.037)	0.190*** (0.037)
Separated	-0.401***	-0.416***	-0.325***	-0.342***	-0.263***	-0.455***	-0.452***	-0.450***	-0.447***	-0.446***

	(0.040)	(0.041)	(0.034)	(0.051)	(0.072)	(0.089)	(0.089)	(0.089)	(0.089)	(0.089)
Divorced	-0.120***	-0.116***	-0.069***	-0.126***	0.047	-0.086	-0.086	-0.079	-0.077	-0.082
	(0.029)	(0.030)	(0.024)	(0.033)	(0.044)	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)
Widowed	0.019	0.000	0.056*	-0.001	0.040	0.162**	0.167***	0.172***	0.167***	0.168***
	(0.036)	(0.036)	(0.029)	(0.042)	(0.055)	(0.065)	(0.065)	(0.065)	(0.065)	(0.065)
Age: 16-20	0.774***	0.769***	0.298***	0.769***	0.842***	0.859***	0.857***	0.848***	0.863***	0.862***
	(0.029)	(0.030)	(0.026)	(0.040)	(0.068)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)
Age: 21-30	0.528***	0.516***	0.187***	0.519***	0.633***	0.576***	0.580***	0.580***	0.582***	0.587***
	(0.019)	(0.019)	(0.017)	(0.023)	(0.034)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Age: 31-40	0.207***	0.199***	0.046***	0.191***	0.259***	0.202***	0.203***	0.203***	0.204***	0.206***
	(0.013)	(0.013)	(0.011)	(0.017)	(0.026)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Age: 51-60	0.002	0.009	0.180***	-0.057***	-0.014	0.123***	0.124***	0.123***	0.126***	0.124***
	(0.015)	(0.015)	(0.013)	(0.020)	(0.031)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
Age: 61-70	0.304***	0.306***	0.533***	0.251***	0.351***	0.315***	0.314***	0.316***	0.315***	0.312***
	(0.019)	(0.020)	(0.017)	(0.024)	(0.033)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Age: 71-80	0.261***	0.260***	0.676***	0.198***	0.255***	0.285***	0.286***	0.285***	0.292***	0.289***
	(0.024)	(0.025)	(0.021)	(0.029)	(0.042)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Age: >80	0.082**	0.073*	0.698***	-0.005	0.081	0.132	0.136	0.126	0.125	0.134
	(0.041)	(0.041)	(0.033)	(0.050)	(0.070)	(0.098)	(0.098)	(0.098)	(0.098)	(0.098)
Educ: High School	0.131***	0.143***	0.043***	0.115***	0.151***	0.127***	0.120***	0.119***	0.117***	0.123***
	(0.019)	(0.020)	(0.016)	(0.023)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
Educ: Above High School	0.228***	0.244***	0.047**	0.214***	0.192***	0.257***	0.245***	0.252***	0.239***	0.252***
	(0.024)	(0.024)	(0.020)	(0.028)	(0.038)	(0.041)	(0.040)	(0.040)	(0.040)	(0.040)
Household Size	-0.158***	-0.157***	-0.136***	-0.155***	-0.158***	-0.130***	-0.127***	-0.130***	-0.125***	-0.130***
	(0.008)	(0.008)	(0.007)	(0.010)	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
No. of Children in Household	0.172***	0.170***	0.145***	0.158***	0.211***	0.117***	0.115***	0.120***	0.114***	0.118***
	(0.009)	(0.009)	(0.008)	(0.011)	(0.016)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
Constant	1.626***	1.764***	5.055***	2.044***	1.266***	1.482***	1.514***	1.450***	1.552***	1.487***
	(0.097)	(0.099)	(0.085)	(0.124)	(0.159)	(0.192)	(0.191)	(0.191)	(0.189)	(0.191)
Time Fixed Effects	Yes									
Observations	420,132	403,603	388,368	104,250	37,391	28,556	28,559	28,529	28,587	28,600
R-squared	0.109	0.109	0.268	0.116	0.187	0.112	0.113	0.114	0.115	0.113

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 2: Variation across East German States

Migrant	-0.2276*** (0.0538)		
Brandenburg	-0.4596*** (0.0307)	Brandenburg*Migrant	0.2250** (0.1130)
Mecklenburg-Vorpommern	-0.2830*** (0.0407)	Mecklenburg-Vorpommern*Migrant	0.1764 (0.1398)
Sachsen	-0.3308*** (0.0251)	Sachsen*Migrant	0.1791* (0.0987)
Sachsen-Anhalt	-0.4461*** (0.0316)	Sachsen-Anhalt*Migrant	0.3372** (0.1320)
Thüringen	-0.3987*** (0.0311)	Thüringen*Migrant	0.1454 (0.1313)
Socio-Demographics		Yes	
Time Fixed Effects		Yes	
Observations		420,130	
R-squared		0.109	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Time and Cohort Interactions

	A Years since Migration (YSM)	B Years since 19'90 (YS90)	C Birth Cohort
Migrant		-0.2966*** (0.1016)	-0.2709*** (0.0883)
East	-0.3840*** (0.0158)	-0.6570*** (0.0267)	-0.4153*** (0.0235)
Migrant*East		0.3220** (0.1416)	0.3207*** (0.1118)
YSM[1-5]	-0.1144** (0.0491)		
YSM[>5]	-0.3407*** (0.0763)		
YSM[1-5]*East	0.1629** (0.0647)		
YSM[>5]*East	0.2419** (0.1034)		
YS90		-0.0158*** (0.0010)	
YS90*Migrant		0.0046 (0.0056)	
YS90*East		0.0192*** (0.0014)	
YS90*Migrant*East		-0.0095 (0.0075)	
C:<1945			0.1716*** (0.0298)
C:>1970			0.1466*** (0.0235)
C:<1945*Migrant			-0.1859 (0.1864)
C:>1970*Migrant			0.1256 (0.1108)
C:<1945*East			-0.0560 (0.0384)
C:>1970*East			0.1933***

			(0.0329)
C:<1945*Migrant*East			-0.1747
			(0.2402)
C:>1970*Migrant*East			-0.1838
			(0.1465)
Constant	1.6216***	2.1403***	1.5982***
	(0.0970)	(0.0932)	(0.0977)
Socio-Demographics	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes
Observations	420,132	420,132	420,132
R-squared	0.109	0.110	0.111

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Regressions Differentiated by Time Periods and Cohort Groups

	A 1990-2016	B 1990-1994	C 1995-1999	D 2000-2004	E 2005-2009	F 2010-2016
All Years of Birth						
Migrant	-0.2280*** (0.0538)	-0.1537 (0.1001)	-0.2560*** (0.0883)	-0.2203*** (0.0732)	-0.2553*** (0.0728)	-0.1891*** (0.0695)
East	-0.3842*** (0.0158)	-0.6226*** (0.0286)	-0.4388*** (0.0243)	-0.4499*** (0.0215)	-0.3261*** (0.0217)	-0.1927*** (0.0202)
Migrant*East	0.2086*** (0.0720)	0.2570* (0.1477)	0.3078*** (0.1169)	0.1487 (0.1000)	0.1845* (0.0954)	0.1029 (0.0896)
Observations	420,132	61,813	70,683	106,974	104,626	142,772
Born before 1945						
Migrant	-0.4740*** (0.1701)	-0.6335 (0.3933)	-0.5069** (0.2364)	-0.3497 (0.3431)	-0.5604** (0.2652)	-0.2705 (0.2553)
East	-0.4909*** (0.0325)	-0.5260*** (0.0517)	-0.4248*** (0.0448)	-0.5213*** (0.0407)	-0.5060*** (0.0449)	-0.4163*** (0.0511)
Migrant*East	0.1623 (0.2168)	0.3567 (0.4490)	0.2941 (0.2928)	-0.1373 (0.3884)	0.2869 (0.3164)	-0.1137 (0.3382)
Observations	112,956	23,918	23,027	32,703	26,904	24,665
Born 1945-1970						
Migrant	-0.2575*** (0.0879)	-0.0809 (0.1021)	-0.2607** (0.1166)	-0.2302** (0.1119)	-0.3553*** (0.1175)	-0.2383* (0.1269)
East	-0.3668*** (0.0237)	-0.6667*** (0.0374)	-0.4271*** (0.0343)	-0.4233*** (0.0317)	-0.2769*** (0.0333)	-0.1430*** (0.0316)
Migrant*East	0.2976*** (0.1112)	0.3992** (0.1647)	0.4229*** (0.1517)	0.2000 (0.1420)	0.2858* (0.1471)	0.2062 (0.1528)
Observations	206,389	32,687	36,582	53,375	50,510	66,024
Born after 1970						
Migrant	-0.1506** (0.0680)	-0.3360 (0.2916)	-0.2129 (0.1615)	-0.1884* (0.0974)	-0.1209 (0.0947)	-0.1126 (0.0861)
East	-0.2644*** (0.0238)	-0.7849*** (0.0759)	-0.5226*** (0.0512)	-0.3742*** (0.0393)	-0.2036*** (0.0343)	-0.1149*** (0.0295)
Migrant*East	0.1417 (0.0943)	0.4307 (0.3777)	0.3728* (0.2214)	0.3461** (0.1518)	0.0600 (0.1312)	-0.0069 (0.1115)

Observations	100,787	5,208	11,074	20,896	27,212	52,083
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All regressions include socio-demographic controls and time fixed effects.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Within-person Changes (Fixed Samples)

	C<1945/1995-99	C<1945/2005-09	C1945-70/1990-94	C>1970/1990-94	C>1970/2010
Migrant	-2.4153*** (0.6774)	-4.1487*** (1.5806)	0.6746*** (0.2452)	0.4313 (0.7718)	-1.5534 (0.9928)
East	-0.7200*** (0.1220)	-1.2701*** (0.2259)	-0.7655*** (0.0590)	-0.9876*** (0.1918)	-0.9995*** (0.2757)
Migrant*East	3.1344*** (0.9051)	4.0168** (1.9453)	2.0594** (0.9477)		2.4936* (1.3771)
YS90	-0.0791*** (0.0096)	-0.0497*** (0.0079)	-0.0827*** (0.0077)	-0.1581*** (0.0486)	-0.0367*** (0.0070)
YS90*Migrant	0.2803*** (0.0807)	0.2242*** (0.0828)	-0.1988*** (0.0682)	-0.4119* (0.2442)	0.0613 (0.0384)
YS90*East	0.0516*** (0.0144)	0.0435*** (0.0128)	0.0180 (0.0131)	0.0489 (0.0471)	0.0401*** (0.0118)
YS90*Migrant*East	-0.4054*** (0.1049)	-0.2292** (0.1015)	-0.2997* (0.1742)		-0.1164** (0.0555)
Constant	1.5935*** (0.4910)	2.6152*** (0.4247)	2.4534*** (0.3527)	4.7806*** (0.9249)	3.3931*** (0.3806)
Socio-Demographics	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	13,980	16,782	22,986	1,740	19,173
R-squared	0.0869	0.0987	0.140	0.136	0.0972

All regressions include socio-demographic controls and time fixed effects.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix

Table A1: Summary Statistics (Mean and SD for DE, East, West)

VARIABLES	A	B	C	D	E	F	G
	Overall	East	West	East 1990	West 1990	East 2016	West 2016
LS (0-10)	7.044 (1.775)	6.572 (1.793)	7.215 (1.737)	6.582 (1.930)	7.295 (1.788)	7.071 (1.730)	7.406 (1.678)
Female	0.528 (0.499)	0.527 (0.499)	0.528 (0.499)	0.526 (0.499)	0.518 (0.500)	0.544 (0.498)	0.540 (0.498)
Married	0.608 (0.488)	0.610 (0.488)	0.607 (0.488)	0.703 (0.457)	0.602 (0.489)	0.563 (0.496)	0.585 (0.493)
Separated	0.021 (0.144)	0.016 (0.126)	0.023 (0.149)	0.006 (0.079)	0.016 (0.125)	0.025 (0.155)	0.024 (0.154)
Divorced	0.077 (0.266)	0.078 (0.269)	0.076 (0.266)	0.059 (0.235)	0.046 (0.210)	0.097 (0.296)	0.100 (0.300)
Widowed	0.066 (0.248)	0.070 (0.255)	0.065 (0.246)	0.064 (0.245)	0.077 (0.267)	0.079 (0.270)	0.060 (0.238)
Age: 16-20	0.035 (0.184)	0.036 (0.185)	0.035 (0.183)	0.065 (0.247)	0.064 (0.245)	0.026 (0.159)	0.038 (0.191)
Age: 21-30	0.147 (0.354)	0.146 (0.353)	0.148 (0.355)	0.210 (0.407)	0.235 (0.424)	0.089 (0.285)	0.111 (0.314)
Age: 31-40	0.193 (0.395)	0.186 (0.389)	0.195 (0.397)	0.239 (0.426)	0.193 (0.395)	0.152 (0.359)	0.153 (0.360)
Age: 51-60	0.163 (0.370)	0.175 (0.380)	0.159 (0.366)	0.162 (0.369)	0.145 (0.353)	0.193 (0.395)	0.183 (0.386)
Age: 61-70	0.137 (0.344)	0.147 (0.354)	0.134 (0.340)	0.090 (0.287)	0.120 (0.325)	0.166 (0.372)	0.133 (0.339)
Age: 71-80	0.089 (0.285)	0.088 (0.283)	0.090 (0.286)	0.042 (0.201)	0.061 (0.239)	0.135 (0.342)	0.119 (0.324)
Age: >80	0.030 (0.169)	0.026 (0.159)	0.031 (0.173)	0.014 (0.119)	0.025 (0.156)	0.046 (0.210)	0.042 (0.200)
Educ: High School	0.648 (0.478)	0.738 (0.440)	0.615 (0.487)	0.811 (0.391)	0.595 (0.491)	0.714 (0.452)	0.615 (0.487)
Educ: Above High School	0.197	0.132	0.221	0.000	0.140	0.199	0.258

	(0.398)	(0.339)	(0.415)	(0.000)	(0.347)	(0.399)	(0.438)
No_of_phh	2.763	2.734	2.774	3.108	2.903	2.556	2.808
	(1.287)	(1.215)	(1.312)	(1.172)	(1.305)	(1.298)	(1.414)
No. of Children in hh	0.612	0.561	0.630	0.781	0.558	0.595	0.698
	(0.968)	(0.910)	(0.988)	(0.955)	(0.912)	(1.024)	(1.069)
Net_Income	2,667	2,082	2,879	948	1,900	2,659	3,514
	(1,890)	(1,223)	(2,038)	(376)	(1,418)	(1,510)	(2,302)
Unemployed	0.049	0.089	0.035	0.000	0.022	0.059	0.033
	(0.216)	(0.285)	(0.183)	(0.000)	(0.148)	(0.236)	(0.178)
Migrant	0.033	0.081	0.016	0.000	0.000	0.121	0.015
	(0.178)	(0.272)	(0.124)	(0.000)	(0.000)	(0.326)	(0.123)
East	0.266	1.000	0.000	1.000	0.000	1.000	0.000
	(0.442)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Migrant*East	0.021	0.081	0.000	0.000	0.000	0.121	0.000
	(0.145)	(0.272)	(0.000)	(0.000)	(0.000)	(0.326)	(0.000)
Observations	420,132	111,565	308,567	3,989	6,772	4,062	13,640

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