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Möhlmann, Axel

Leibniz Universität Hannover

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Axel Möhlmann, *Leibniz Universität Hannover*

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Abstract

This paper studies differences in tax morale attitudes between East and West Germany using multiple recent data sets. Contrary to previous 1990s evidence, but in line with recent studies on an east-west mentality gap, we find a persistent higher tax morale in East Germany and no indication of convergence over time. Distinguishing between region of living and birth and periods of within-country migration reveals that the East Germans who stayed determine the results and that migration vanishes differences. Regional economic heterogeneity of tax revenue transfers cannot explain the results. We find a framing effect on the tax morale gap with questions phrasing tax paying as the duty of a good citizen. This result suggests no gap of tax morale with moral reasoning related to the social order and citizenry.

Keywords - tax morale, German reunification, east-west differences, convergence, moral reasoning

JEL classification: H26, H73

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Abstract

This paper studies differences in tax morale attitudes between East and West Germany using multiple recent data sets. Contrary to previous 1990s evidence, but in line with recent studies on an east-west mentality gap, we find a persistent higher tax morale in East Germany and no indication of convergence over time. Distinguishing between region of living and birth and periods of within-country migration reveals that the East Germans who stayed determine the results and that migration vanishes differences. Regional economic heterogeneity of tax revenue transfers cannot explain the results. We find a framing effect on the tax morale gap with questions phrasing tax paying as the duty of a good citizen. This result suggests no gap of tax morale with moral reasoning related to the social order and citizenry.

1   Introduction

More than 22 years after the reunification of formerly communist East Germany and democratic West Germany the difference in political and social values and the speed of convergence are subject to an ongoing debate. Economic research offers mixed evidence. On the one hand, Ockenfels and Weimann (1999) and Brosig et al. (2011) find experimentally a persistent solidarity gap: East German subjects are significantly less willing to share a windfall profit than Western German subjects even after 20 years of being united in one country. The researchers explain their findings by an establishment of constant behavioral norms early in life. Bauernschuster and Rainer (2012) show a widening of the east-west gap in sex-role attitudes, for example regarding the statement whether it is important for a women to support her husband's career instead of her own. Heineck and Süssmuth (2010) find persistence of a lower level of social trust in East Germany. Contrary, Alesina and Fuchs-Schündeln (2007) report that a stronger preference for social redistribution policies of East Germans converges with the West German level

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over time. And, Heinemann (2008) finds a convergence of the higher reluctance to claim government benefits without legal entitlement of East Germans.

This paper studies the long-term convergence of tax morale attitudes after the German reunification. Tax morale is a psychological explanation for voluntary tax compliance: Some taxpayers are unwilling to cheat on taxes due to moral considerations. The attitude of tax morale has direct economic effects, in particular on tax compliance behavior (Halla 2012) and on the size of the shadow economy (Torgler and Schneider 2009). Torgler (2003) pioneered the empirical investigation of tax morale differences between East and West Germany using World Value Survey (WVS) and European Value Survey (EVS) data. He finds higher tax morale of East Germans relative to West Germans and a convergence between 1990 and 1997. Feld et al. (2008) add 1999 EVS data to the analysis and report no significant gap in 1999. Feld and Larsen (2012) report the results of a series of surveys conducted by the Rockwool Foundation between 2001 and 2008. They find slightly higher tax morale in East Germany than in West Germany across all years. However, this study focuses on determinants of undeclared labor and does not analyze tax morale differences conditional on respondent characteristics.

We replicate the previous tax morale results and extend the empirical evidence with analyses of six recent data sets collected after 1998: (1) The fifth wave World Value Survey (WVS) of 2006. (2) The fourth wave European Value Survey (EVS) of 2008. (3) The 2000 and 2002 German General Social Survey (ALLBUS). (4) The International Social Survey Programme (ISSP) - Religion II of 1998. (5) The ISSP - Citizenship of 2004. And, (6) the second wave of the European Social Survey of 2004.

Tax morale is heterogeneous across countries and over time (Alm and Torgler 2006). At the same time, the determinants of its formation and evolution are less known. Some research points towards an effect of institutions such as elements of direct democracy (Torgler 2005a) and political centralization (Güth et al. 2005). We complement this research stream by studying the effect of political institutions on the formation and

evolution of tax morale. Specifically, we study the long-term effect of the political regime and political transition: The period from 1949 to 1990 in East Germany constitutes an exogenous shock of different regimes in two parts of one nation. Thus, observations after the German reunification in 1989/90 provide the opportunity to study a natural experiment (Alesina and Fuchs-Schündeln 2007; Redding and Sturm 2008; Heineck and Süssmuth 2010). The post-merger development of tax morale over time enables us to examine the persistence of an institutional effect on tax morale.

An important policy question is whether the effect of political institutions on tax morale implies that a change of political institutions is able to increase the existing tax morale of citizens within a foreseeable time horizon. Studying observations across 18 years we assess the time elasticity of tax morale attitudes with respect to such changes. The use of previously uninvestigated data improves the robustness of using WVS data to make inferences about the tax morale gap development over time. Further, we are the first to employ data that allows distinguishing the effect of living and being born in East Germany and to account for within-country migration and we study the sensitivity of results on the survey question framing. This allows us to draw conclusions on different reasonings underlying tax morale and we partly open the "black box" tax morale (Alm and Torgler 2006). All investigated data sets include different forms of questions on tax morale and permit multivariate regressions using a broad set of controls. This allows addressing concerns of respondent heterogeneity effects.

We display a summary of our results in table 1. It includes type of questions employed and the predicted effect of living in East Germany on tax morale obtained in multivariate regressions. Our main results are the following: First, the gap in tax morale between East and West Germany is persistent in the 2000s. Second, the persistence points toward a social norm-based explanation for the tax morale gap, as explained in detail in the next section. Third, the effect is determined by the ones who stayed in East Germany and within-country migration reduces differences. Fourth, a tax morale gap is only observed

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without a context framing of being a good citizen. This points to no difference in moral reasonings related to social order and citizenry. Fifth, we find no effect of controlling for regional economic heterogeneity which suggests that economic differences cannot explain the east-west tax morale gap.

Table 1: Tax Morale gap between East and West Germany. Summary of new results

Tax morale normalized between 0 (low tax morale) and 1 (high tax morale)			
Dataset	Type of question	Frame	Effect of East on tax morale[†]
WVS 2006	Do you think it can be justified to	None	.058
EVS 2008	cheat on taxes if you have a chance	None	.073
ALLBUS 2000	Evaluate: Deliberately wrong income	None	.024
ALLBUS 2002	tax return to receive too much tax refund	None	.033
ISSP Religion	Do you feel it is wrong or not wrong if a taxpayer does not report all income to pay less income taxes	None	.058
ISSP Citizenship	To be a good citizen, how important is: Never to try to evade taxes	Good citizen	-.053
ESS question 1	How much do you agree or disagree: Citizens should not cheat on taxes	Good citizen	.016
ESS question 2	How wrong do you consider someone paying cash with no receipt to avoid paying VAT or other taxes	None	.062

[†] Difference between coefficient of East Germany for the reference survey EVS 1990 and the survey East Germany interaction term.

The paper proceeds as follows. The next section contextualizes the concept of tax morale and discusses theoretical arguments for a tax morale gap between East and West Germany. Section 3 outlines our empirical approach. Then in section 4, we analyze multiple surveys. Section 5 comments on the effect of question framings. In section 6 we present robustness checks. In particular, we comment on the effect of within-country

migration, the East effect within the city of Berlin, the effect of regional economic heterogeneity and the role of pre-war religious heterogeneity. The last section concludes.

2 Tax morale and the gap between East and West Germany

Tax morale is a special form of solidarity behavior with only little interpersonal coordination and social interaction (Brosig et al. 2011). There is a relation to the concept of being a good citizen which is mirrored in the definition of Schmölders (1959, 2006): *"The term tax morale coins an attitude of accomplishment of tax duties, anchored in citizens' tax mentality and their consciousness to be citizens, which is the base of their inner acceptance of the tax duty and the approval of the tax authority of the government."* Schmölders (1970; 2006) sees a sense of citizenship and an intellectual commitment to the duties of citizenship as basis of successful taxation. Slemrod (2010) discusses tax morale as a form of reciprocal altruism based on trust that the government acts in one's fair interest. More simply, Alm and Torgler (2006) define tax morale as the intrinsic motivation to pay taxes. In comparison to other attitudes, tax morale is a specific behavioral norm related to one's home country, one's government and a large number of anonymous fellow countrymen.

There is a large literature on differences in attitudes between East and West Germany. These differences are either attributed to an effect of socialist legacy, East Germans internalized social and political norms by living under socialism and through the educational and propaganda systems, or to the experience of the reunification process and the following transformation (Grix 2000). In the following we discuss attitudinal mechanisms that can plausibly generate the tax morale gap. First, different political cultures – different attitudes about political ideals and the role of the government – can alter tax morale. The political science literature highlights east-west differences in political culture: Conradt (1998) summarizes persistent differences in the acceptance of

democracy, satisfaction with performance of democracy, confidence in democratic institutions and policy expectations. A political culture mechanism behind our result could be that a higher preference in East Germany for equality and the strong role assigned to the government to guarantee this equality. This preference plausibly leads to disapproval of tax cheating because tax revenues are needed for the government to fulfill its role. Conradt (1998) reports that many East Germans support a strong government and the view that the government should reduce income differences and control wages and salaries. Similarly, Kuhn (2012) demonstrates that more East Germans believe in the government's responsibility to reduce large inequalities.

Another mechanism are differences in social norms – behavior patterns sustained by social approval or disapproval. The higher tax morale could reflect the view that it is a social norm to comply with the tax law. Torgler (2003) explains the gap by differences in adherence to norms and trust in authority. East Germans lived under an authoritarian regime and internalized adherence to norms they had been forced to observe for years and which they learned through the education system and mass organizations. In line with this explanation many studies report a predominance of deference toward authority and conformity in East Germany (Conradt 1998). Another social norm mechanism could be a different social approval of dishonest behavior unrelated to the will of authorities. In fact, psychological studies report higher levels of unconditional empathy of East Germans (Brähler and Richter 1995).

The persistence of the tax morale gap has different implications for the aforementioned mechanisms. Brosig et al. (2011) argue for a higher persistence of social norms than of political values. The argument is – based on an extensive literature review – that social behavior is established in the early childhood and that there is a high correlation between social behavior across generations. Contrary, the environment affects political values and there is little correlation between political values of parents and children. Hence, persistence of tax morale gap points towards the explanation based on social

norms, while convergence within one generation would point to an explanation based on political culture.

There is also a plausible economic explanation. As a consequence of the communist regime East Germany is poorer than West Germany. The German government seeks to reduce within-country economic differences, in particular through direct transfers and the financial equalization scheme between the federal states. Sinn (2002) reports that during 1990s West Germany financed one third of the resource use in East Germany. The transfers are transparent and partly financed by a specific income tax supplement labeled for this purpose, the so-called *Solidaritätszuschlag* (solidarity surcharge). Alm et al. (1993) show that willingness to pay taxes depends on the approval of the use of tax revenues. If East German taxpayers believe and value that income transfers result in a regional benefit from the tax revenue, they will have a higher tax morale. Then, differences between West to East Germany in tax morale could be the result of aggregate income transfers.

Temporary shocks may affect any long-term convergence trend. A few years after the reunification researchers observed an emergence of post-unification dissatisfaction of East Germans with political institutions (Wiesenthal, 1998). The dissatisfaction is partly based on an "exposure shock" and the economic deterioration, but also emerged as a consequence of expectations that were set too high and impossible to satisfy. At the same time a sentiment of *Ostalgie* (East nostalgia) emerged, a positive identification with aspects perceived as being typically East German. Both these shocks may possibly affect the tax morale gap. This may explain the finding of a halt of convergence trends during the 2000s. Note, that even though these shocks emerged in the years after the merger, they are nevertheless direct consequences of the German partition, and partly a rebound effect inherent in a convergence process.

3 Empirical strategy

In this section we outline our empirical approach and discuss its validity to identify a tax morale gap between East and West Germany rooted in the German partition. We estimate regressions of the following form:

$$TaxMorale_i = \alpha_0 + \alpha_1 East_i + \alpha_2 Survey_i + \alpha_3 Survey_i \times East_i + \alpha_4 X_{i,j} + \epsilon_i \quad (1)$$

where *TaxMorale* of respondent i measures the respondents' tax morale. *East* indicates whether the respondent lives in East Germany. This variable captures the persistent effect of the different regimes in east and west. *Survey* is a survey fixed effect and *Survey*×*East* are interaction terms of the survey fixed effect and East Germany. The interaction terms estimate differences in the *East* effect between surveys. This allows us to study potential time trends of convergence or persistence. X_j is a vector of various covariates of respondent characteristics. We use various control variables such as age cohort, sex, level of education and family status.

Following World War II and the raising of the Iron Curtain, Germany was divided in two countries with different political regimes. In 1949 living in either the communist or democratic regime had been assigned to people rather than been a choice. Between 1949 and 1989/90, East and West Germans have lived in different economic and political systems. In East Germany political rights and civil liberties have been on a low level while West Germans have lived in a free and democratic state (Gastil 1990). In 1989/90, the West German system has been abruptly – and previously unanticipated (Hirschman 1993) – adopted in East Germany. Therefore, the German reunification enables us to study a natural experiment and a comparison of east and west in reunified Germany allows deriving comments on the effect of political regimes on preferences and attitudes.

Omitted variables of two forms may challenge the interpretation of the natural experiment: First, pre-1949 differences between East and West Germany may still have

persistent effects today. Second, there may be post-1990 trends that differently affected East and West Germany that are not rooted in the pre-1990 partition. With respect to pre-war differences, Alesina and Fuchs-Schündeln (2007) infer that important economic variables and attitudes were similar in pre-war East and West Germany and Wolf (2009) shows a high degree of regional homogeneity of the German Reich in 1933. We conduct two additional analyses in regard to two specific pre-1949 trends (geography and religion) in section 6. The estimates suggest robustness of the east-west tax morale gap with respect to pre-1949 differences.

With respect to post-1990 trends, some east-west differences today might be consequences of unobservable post-1990 trends and constitute omitted variables. For our analysis, only data of East and West Germany is available, but no further control group. Our empirical strategy relies on the presumption that the east-west differences of today are consequences of the different regimes or the political transformation process. We believe it to be unlikely that any post-1990 trend separately affected the tax morale in East Germany which is not an effect rooted in the pre-1990 partition. For example, one may raise a concern along the line that East and West Germany today are heterogeneous with respect to wealth, unemployment levels, industrial structure, migration patterns, net transfer per capita and other dimensions. However, this does not affect the interpretability of the estimates as long as the heterogeneity is an effect of the partition and the different economic systems (see also Alesina and Fuchs-Schündeln 2007 on this point). We believe that East Germany is different along many dimensions, however, these differences are outcomes of the communist regime and the political transition process. The *East* effect estimated in regression (1) cannot be directly disentangled with respect to specific mechanisms behind the effect. However, analyzing the longitudinal element and the effect of question framings enables us to comment on the plausibility of different mechanisms. With respect to separating attitudinal effects from economic effects, we analyze in section 6 whether regional and time heterogeneity of income transfers affects tax

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morale and the *East* effect. The estimates suggest that regional economic heterogeneity cannor explain our results.

An additional point is that a significant share of citizens living now in East and West Germany are not born and raised there. One may argue that an effect of East Germany is persistent today because of specific characteristics of those who stayed in East Germany while others migrated. With respect to within-country migration, we provide an additional analysis in section 6. This analysis shows that indeed within-country migration vanishes differences.

4 Data and estimates

We pool the observations of all surveys into one data set. Table 2 presents the surveys included and unconditional differences of tax morale between East and West Germany. In the following we briefly introduce each survey and the investigated question to measure tax morale.

The WVS and the EVS are a series of cross-national surveys with the aim to provide nationally representative samples of multiple countries. In Germany, they cover the full population, 18 years and older. Probability sampling is done in stages: In short, first there are two strata of similar size, East and West Germany. Mail code areas are randomly selected and within these areas households are selected from phone registers. We investigate the following WVS and EVS question: *"Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between – Cheating on taxes if you have a chance."* This data and question are frequently used in the economic literature to study tax morale (e.g., Torgler 2003; Alm and Torgler 2006; Torgler and Schneider 2009; Heinemann 2011; Doerrenberg and Peichl 2011; Doerrenberg et al. 2012; Halla 2012). Answers are on a ten-point ordinal scale with one meaning *"never justifiable"* and ten meaning *"always justifiable"*. This means higher

points indicate lower tax morale. We include all waves available between the German reunification in 1990 and today.

ALLBUS is a biennial cross-sectional survey of the German population (precisely, all people living in Germany with sufficient German language proficiency). The survey uses a two-stage approach with random selection of communities and within communities random sampling of entries from the local residents' registration office. The focus is on attitudes, behavior and social structure. It is conducted through face-to-face interviews. The survey emphasis varies between years. A tax morale question is only included in the 2000 and the 2002 surveys. The investigated question is the following: *"Please evaluate the following behavior: An employee makes deliberately wrong statements in his yearly income tax return and receives 500 Euro too much tax refund"* (translated from the German version). Answers are on a four point ordinal scale with one meaning *"very bad"* and four meaning *"not bad at all"*. This tax morale question is to our knowledge not yet examined.

The ISSP is a series of annual cross-national surveys with the aim to provide nationally representative samples of multiple countries. In Germany, the data is raised by a written drop-off for respondents in a subsample of the ALLBUS survey sample. We investigate two one-time surveys, the module Religion II in 1998 and the module Citizenship in 2004. The 1998 survey includes the following question: *"Consider the situations listed below. Do you feel it is wrong or not wrong if a taxpayer does not report all of [his/her] income in order to pay less income taxes."* Answers are on a four point ordinal scale with one meaning *"not wrong"* and four meaning *"seriously wrong"*. Torgler (2005a) and Torgler (2005b) previously used this tax morale measure. The 2004 survey includes the following question: *"There are different opinions as to what it takes to be a good citizen. As far as you are concerned personally on a scale of 1 to 7, where 1 is not at all important and 7 is very important, how important is it: Never to try to evade taxes."* To our knowledge, Konrad and Qari (2012) are the only researchers previously

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Table 2: Overview of surveys conducted in Germany which include tax morale questions: unconditional tax morale difference between West and East Germany

				Tax Morale	
No.	Survey name	Year	N	West	East
1)	EVS (2nd wave)	1990	3,379	.78 (.27)	.89 (.20)
2)	WVS† (3rd wave)	1997	1,968	.76 (.29)	.80 (.29)
3)	EVS (3rd wave)	1999	1,989	.85 (.22)	.84 (.26)
4)	WVS† (5th wave)	2006	2,000	.84 (.20)	.90 (.19)
5)	EVS (4th wave)	2008	2,056	.85 (.20)	.93 (.14)
6)	ALLBUS	2000	2,100	.56 (.28)	.58 (.21)
7)	ALLBUS	2002	2,773	.55 (.29)	.58 (.30)
8)	ISSP Religion II	1998	1,798	.52 (.32)	.58 (.32)
9)	ISSP Citizenship	2004	1,120	.81 (.25)	.76 (.28)
10)	ESS (2nd wave): Question1	2004	2,718	.69 (.23)	.71 (.21)
11)	ESS (2nd wave): Question2	2004	2,688	.43 (.26)	.50 (.25)

Mean tax morale measures, standard deviation in parentheses. Tax morale measure linearly normalized separately for each survey to a scale between zero and one with one capturing high tax morale and zero capturing no tax morale.

N = number of observations

† No German data in first, second and fourth wave of the WVS.

using this tax morale measure.

The ESS is a biennial cross-national survey of political and social attitudes. It covers the full German population (regardless of citizenship and language proficiency). It is conducted through face-to-face interviews. Similar to the ALLBUS, the survey uses a two-stage random sampling approach of communities and within communities using entries from the local residents' registration office. The second wave of 2004 has a focus on economic morale. It includes two tax morale relevant questions: First, *"How much do you agree or disagree with each of these statements? Citizens should not cheat on taxes."* Answers are on a five point ordinal scale with one meaning *"Agree strongly"* and five meaning *"Disagree strongly"*. Lago-Peñas and Lago-Peñas (2010) use this question to measure tax morale. Second, *"How wrong, if at all, do you consider the following ways of behaving to be? How wrong is? ...someone paying cash with no receipt so as to avoid paying VAT or other taxes?"* Answers are on a four point ordinal scale with one meaning

"not wrong at all" and four meaning *"seriously wrong"*. This tax morale question is to our knowledge not yet examined.

To make the dependent variable tax morale comparable between the surveys, we linearly normalize all tax morale measures to a scale between zero and one with one capturing high tax morale and zero capturing no tax morale. We use this measure as the unconditional tax morale difference between East and West Germany in table 2 and as dependent variable in an OLS regression of (1). Note, that the linear transformation neglects the ordinal scale of the survey responses but has the main advantage of easy interpretability. Alternatively, we estimate a probit regression of (1) using a binary measure of tax morale with 1 for a response of highest morale in the respective survey and 0 else (highest tax morale is by far the most selected answer, the binary measure is 1 (highest tax morale) for 35.6% of all observations).[1]

The summary in table 2 illustrates a higher unconditional tax morale in East Germany for all surveys except the EVS 1999 and the ISSP Citizenship 2004. We observe the highest gap for the earliest survey, the EVS 1990. Apart from that we observe no time trend: The tax morale gap occurs across all survey years. To estimate tax morale differences conditional on various covariates of individual characteristics we turn to regression analysis of (1). Table 3 displays summary statistics of covariates used. Table 4 displays the regression results. The coefficient of *East* shows the effect of East Germany in the reference survey, the EVS 1990. The coefficients of the interaction terms show the effect of East Germany in the other surveys relative to the effect in the reference survey. While the OLS effect of *East* is positive in 1990, the coefficient estimates of the interactions are all negative. This indicates that the strongest difference between East and West Germany is observed in the 1990 survey. Assessing the difference between the coefficient estimate of *East* and the interaction term coefficients shows positive es-

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[1]To account for the ordinal scale, we also estimate an ordered probit regression. The estimates of the interaction term coefficients relative to the *East* have the same algebraic sign and significance levels except the results for the ALLBUS 2000 and 2002 which are both positive and weakly significant.

Table 3: Overview covariates and mean response by survey

Survey	East	A3049	A5064	A65	Fem	UEnt	Uni	Marr	Div	Wid	
EVS1990	0.39	0.35	0.22	0.18	0.53	0.21	0.13	0.58	0.05	0.11	
WVS1997	0.50	0.43	0.21	0.13	0.54	0.37	0.24	0.56	0.07	0.08	
EVS1999	0.49	0.37	0.23	0.24	0.57	0.22	0.12	0.57	0.09	0.12	
WVS2006	0.52	0.35	0.24	0.27	0.56	0.26	0.13	0.59	0.06	0.10	
EVS2008	0.48	0.35	0.28	0.23	0.52	0.29	0.22	0.52	0.13	0.10	
ALLBUS2000	0.35	0.39	0.26	0.19	0.52	0.23	0.14	0.62	0.06	0.09	
ALLBUS2002	0.31	0.41	0.24	0.18	0.50	0.29	0.17	0.61	0.07	0.07	
ISSP1998	0.50	0.37	0.25	0.21	0.55	0.21	0.16	0.56	0.10	0.14	
ISSP2004	0.33	0.38	0.24	0.21	0.51	0.21	0.14	0.61	0.08	0.08	
ESS2004	0.36	0.37	0.25	0.19	0.52	0.29	0.16	0.55	0.08	0.08	
Total	0.41	0.38	0.24	0.20	0.53	0.26	0.16	0.58	0.08	0.09	

Survey	Inc1	Inc2	Inc3	Inc4	RInc	Part	Self	Unem	Home	Stud	Ret
EVS1990	0.32	0.16	0.10	0.24	0.05	0.07	0.02	0.03	0.10	0.03	0.21
WVS1997	0.17	0.17	0.25	0.09	0.16	0.10	0.02	0.10	0.06	0.07	0.22
EVS1999	0.17	0.20	0.17	0.10	0.21	0.06	0.05	0.09	0.08	0.05	0.31
WVS2006	0.28	0.18	0.19	0.11	0.10	0.11	0.04	0.10	0.06	0.05	0.34
EVS2008	0.33	0.19	0.00	0.23	0.11	0.09	0.04	0.11	0.04	0.03	0.28
ALLBUS2000	0.19	0.17	0.19	0.16	0.15	0.07	0.05	0.07	0.08	0.04	0.25
ALLBUS2002	0.17	0.16	0.15	0.19	0.13	0.06	0.06	0.07	0.09	0.06	0.24
ISSP1998	0.18	0.17	0.14	0.16	0.23	0.06	0.05	0.11	0.12	0.04	0.31
ISSP2004	0.19	0.16	0.17	0.18	0.14	0.07	0.10	0.07	0.09	0.05	0.27
ESS2004	0.23	0.13	0.11	0.23	0.24	0.11	0.08	0.09	0.10	0.10	0.25
Total	0.23	0.16	0.14	0.18	0.16	0.08	0.05	0.08	0.09	0.06	0.26

Description, all covariates are dummy variables. East: Living in East Germany. A3049: Age
between 30 and 49 years, A5064: Age between 50 and 64 years, A65: Age older than 65 years.
Fem: Female sex. UEnt: Holding university entrance qualification. Uni: Holding university degree.
Marr: Married. Div: Divorced. Wid: Widowed.
Inc1: Belonging to lowest income quintile. Inc2: Belonging to 20% to 40% income quintile
Inc3: Belonging to 40% to 60% income quintile. Inc4: Belonging to 60% to 80% income quintile.
RInc: Refused to report income. Quintiles based on self-reported household income, calculated for
respective survey respondents. Uneven distribution due to ordinal scale of reported income.
Part: Part-time employed. Self: Self-employed. Unem: Unemployed and jobseeking.
Home: Voluntarily not working / housewife. Stud: Enrolled at school or university. Ret: Retired

Table 4: Regression results, pooled surveys 1990-2008 with survey fixed effect

Dependent variable:	Tax Morale between 0 and 1 Normalized survey responses		Binary Tax Morale 1 = highest tax morale, 0 = else	
Method:	OLS		Probit	
	Coefficient	SE	Coefficient	SE
East	0.119***	(0.00794)	0.738***	(0.0458)
Survey fixed effects				
WVS 1997	-0.0111	(0.0109)	0.0544	(0.0498)
EVS 1999	0.0653***	(0.00891)	0.391***	(0.0491)
WVS 2006	0.0569***	(0.00874)	0.165***	(0.0507)
EVS 2008	0.0729***	(0.00854)	0.298***	(0.0483)
ALLBUS 2000	-0.216***	(0.00957)	-0.692***	(0.0491)
ALLBUS 2002	-0.233***	(0.00882)	-0.680***	(0.0445)
ISSP 1998	-0.259***	(0.0121)	-0.652***	(0.0564)
ISSP 2004	0.0336***	(0.0107)	0.186***	(0.0546
ESS 2004 question 1	-0.0854***	(0.00796)	-0.700***	(0.0463)
ESS 2004 question 2	-0.346***	(0.00849)	-1.303***	(0.0564)
Interaction survey fixed effects and East Germany				
East × WVS 1997	-0.0865***	(0.0152)	-0.464***	(0.0733)
East × EVS 1999	-0.128***	(0.0132)	-0.718***	(0.0733)
East × WVS 2006	-0.0614***	(0.0117)	-0.168**	(0.0745)
East × EVS 2008	-0.0461***	(0.0111)	-0.236***	(0.0739
East × ALLBUS 2000	-0.0954***	(0.0160)	-0.510***	(0.0804)
East × ALLBUS 2002	-0.0859***	(0.0144)	-0.577***	(0.0744)
East × ISSP 1998	-0.0613***	(0.0169)	-0.561***	(0.0808)
East × ISSP 2004	-0.172***	(0.0184)	-0.953***	(0.0927)
East × ESS 2004 question 1	-0.103***	(0.0117)	-0.738***	(0.0757)
East × ESS 2004 question 2	-0.0572***	(0.0129)	-0.564***	(0.0885)
Control variables				
Age between 30 and 49 years	0.00894	(0.00621)	0.0668**	(0.0325)
Age between 50 and 64 years	0.0465***	(0.00703)	0.232***	(0.0373)
Age older than 65 years	0.0718***	(0.00896)	0.331***	(0.0484)
Female	0.0318***	(0.00357)	0.151***	(0.0196)
Holding university entrance qualification	-0.00868	(0.00547)	-0.105***	(0.0316)
Holding university degree	0.00847	(0.00648)	0.0272	(0.0370)
Married	0.0322***	(0.00526)	0.123***	(0.0280)
Divorced	0.00702	(0.00773)	0.0772*	(0.0407)
Widowed	0.0251***	(0.00768)	0.130***	(0.0422)
Lowest income quintile	0.0158**	(0.00616)	0.0760**	(0.0335)
20% to 40% income quintile	0.0179***	(0.00628)	0.0327	(0.0341)
40% to 60% income quintile	0.00588	(0.00663)	0.0373	(0.0352)
60% to 80% income quintile	0.00561	(0.00595)	-0.0274	(0.0332)
Refused to report income	0.0191***	(0.00650)	0.180***	(0.0345)
Part-time employed	-0.0131**	(0.00594)	-0.0930***	(0.0342)
Self-employed	-0.0194***	(0.00749)	-0.117***	(0.0434)
Unemployed and jobseeking	-0.0117	(0.00735)	0.0700*	(0.0369)
Voluntarily not working / housewife	0.00646	(0.00649)	0.0588	(0.0359)
Enrolled at school / university	0.0109	(0.00846)	0.00221	(0.0495)
Retired	0.0161***	(0.00617)	0.0912***	(0.0345)
Constant	0.701***	(0.00894)	-0.604***	(0.0454)
Observations	24,584		24,584	
r²	0.285			
McFadden Pseudo r²			0.185	

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Reference category living in West Germany, EVS 1990 survey, age younger than 30 years, male,
less than university entrance education, single, highest income quantile within survey and full time
employed. Good citizen framing of tax morale in ISSP 2004 and ESS 2004 question 1.

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timates of the effect of living in East Germany on tax morale in all surveys except the EVS 1999 and the ISSP 2004. This difference is significant, specifically larger than two times the standard deviation of the interaction term estimate, for all surveys except the ALLBUS 2000 and the ESS 2004 question 1.[2] The probit results are similar except that a significant positive effect of *East* on tax morale is also observed for the ALLBUS 2000.

The estimates replicate and confirm the main result of Torgler (2003) of significantly higher tax morale in East Germany than in West Germany conditional on various control variables. The WVS/EVS surveys also suggest a declining tax morale gap between 1990 and 1999. However, the new data employed does not confirm his conclusion on a convergence trend. For the WVS/EVS data we rather find a weak u-form relationship: In 1990 respondents in East Germany assign 0.11 points more to the importance of not cheating on taxes on a scale between 0 and 1. This gap is much lower in 1997 and reaches around zero in 1999. However, for the waves of 2006 and 2008 (the new data investigated) one observes an increase of the tax morale gap. In 2006 and 2008 East Germans assign 0.06 and 0.07 points more to tax morale than West Germans. The estimates for the other surveys confirm this observation. As discussed in detail in the next section the framing of the tax morale question affects the results of the ISSP 2004 and the ESS 2004 question 1, such that we cannot generalize the results for these two surveys.

Therefore, our results indicate the opposite of convergence: The east-west gap in tax morale is stronger in 2006 and 2008 than it was in 1997. And the zero result using the 1999 data remains the exception. Thus, recent 2000s data predicts a persistent gap. The slow convergence suggests an explanation based on a social norm established in the early childhood rather than an explanation based on different political values. The increase of the tax morale gap in the 2000s points toward the possibility of an influence of temporary shocks rather than a monotonic convergence trend.

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[2] We use robust standard errors. Clustering standard errors with region of living increases the significance of the East effect of the interaction terms.

5 Effect of question framings

The ISSP 2004 question and the first ESS 2004 question differ in an important dimension from all other examined questions: They emphasize the link between taxpaying and being a good citizen. This means the moral reasoning is framed with social behavior as a member of one's nation. Contrary, the WVS and EVS questions analyzed in the previous literature do not distinctly motivate reasons why tax cheating should or should not be justifiable.

As pointed out in section 2, the economic literature contains different definitions of the concept tax morale. While Schmölders (1970, 2006) defines tax morale with regard to the duty of a citizen, others define tax morale without regard to a moral reasoning. In addition, tax morale often reflects a particular view on the role of government, trust within a community and approval of tax revenues use (Slemrod 2003).

We see different plausible reasonings why taxpayers may view tax cheating as immoral behavior. The psychological literature on moral reasonings distinguishes different forms of reasoning (based on Rest 1994 and Doyle et al. 2012): In particular, morale due to conformity to behavior which is believed to be natural and approved by others vs. conformity to behavior which is believed to be in line with social order and the will of authorities. This good citizen frame can potentially emphasize a social norm – being a good citizen based on social approval or disapproval by other citizens. It can also highlight that political culture embraces a certain role of government and that it is the citizens' duty to support this role. A mechanism less related to being a good citizen is conformity to behavior which is believed to be natural and approved by others but unrelated to authority and citizenry. The mechanism of income transfers and approval of tax revenues is also less related to the framing. With a frame of the moral reasoning being a good citizen, there is potentially a crowding-out of other reasonings. If we assume such a crowding-out, we will be able to exploit the variation in question framings to draw

conclusions on the reasoning for tax morale.

The results in table 4 show with the ISSP data set a contradictory effect of living in East Germany. Estimates of the first question of the ESS predict an insignificant effect of tax morale. This is contrary to estimates for the other questions, which means that in all questions, which frame the tax morale questions with a good citizen morale rationale, we do not find a tax morale gap. The context framing affects the results. This indicates that tax morale reasonings related to the duty of a good citizen do not differ between East and West Germany, while other forms of reasonings differ.

6 Additional results

6.1 Effect of within-country migration

The ALLBUS data includes observations of the region of birth and region of residence as well as the year of east-west or west-east migration. This enables us to account for within-country migration and to distinguish the effect of (1) living in East Germany, (2) living and being born in East Germany, and (3) being born in East Germany and migrated to West Germany. Further, we distinguish between east-west migration before and after the reunification.

In the data we observe that 97% of respondents living in East Germany are also born there. In West Germany, 6.8% of respondents are born in East Germany – 3.6% have migrated before the erection of the Berlin Wall in 1961, 0.8% between 1962 and 1988 and 2.5% after 1989. The official statistics count 2.7 million east-west migrants between 1949 and 1961 and 0.6 million between 1962 and 1988 (Hirschman 1993). Between 1989 and 2002 in total 2.8 million people have migrated from East to West Germany of a 16 million East German population (Heiland 2004). There is substantial heterogeneity between stayers and migrants. Pre-1961 migrants are "voting with the feet", i.e., are mostly well educated and discontent with the regime. Migrants between 1961 and 1989

consist of two groups: 30% illegal refugees and 70% authorized migrants, mainly older people and political prisoners (Hirschman 1993). Post-1989 east-west migrants are on average younger, unmarried and better educated than the ones who stayed and often experienced a lay-off (Hunt 2006, Fuchs-Schündeln and Schündeln 2009). An explanation for the tax morale differences based on social norms established in early childhood leads to the prediction that we observe higher tax morale also for migrants from East to West Germany. However, any interpretation is challenged by the self-selection of within-country migrants: It is likely migrants share already some attitudes to West Germans and have close ties to friends or relatives in West Germany (Fuchs-Schündeln and Schündeln 2009).

We estimate four types of multivariate regressions: The first and second include living in East Germany and being born in East Germany respectively as independent variable. In the third regression, we distinguish between (1) born and living in East Germany, (2) born in East Germany and living in West Germany, and (3) born in West Germany and living in East Germany. In the fourth regression we separate east-west migrants before and after 1989. Table 5 displays OLS regression results.[3] We observe a significant and positive effect of living in East Germany on tax morale. There is also a significant and positive effect of being born in East Germany, albeit with a lower coefficient and weaker significance. In the third and fourth regression, only the estimate of being born and living in East Germany turns significant, while all other east / west independent variables are insignificant. There is no significant tax morale difference between within-country migrants and people both born and living in West Germany. This indicates that the tax morale gap vanishes with within-country migration and the gap is determined by the ones who stay in East Germany. This results contrasts with a social norm explanation and the concept of constant social norms established in early childhood.

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[3]We also estimated ordered probit regressions and obtained similar results.

Table 5: Regression results, ALLBUS data from 2000 and 2002

Dependent variable: Tax morale – evaluation of deliberately wrong statements in the income tax return, ordinal scale
1 = very bad, 4 = not bad at all.

Columns	(1)		(2)		(3)		(4)	
Method	OLS		OLS		OLS		OLS	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Living East Germany	-0.0892**	(0.0436)						
Born East Germany			-0.0732*	(0.0442)				
Born & living East Germany					-0.0838*	(0.0470)	-0.0811*	(0.0468)
Born East, migrated to West					-0.0275	(0.102)		
Born West, migrated to East					-0.113	(0.145)		
Born East, migrated to West before 1989							-0.00791	(0.134)
Born East, migrated to West after 1989							-0.0462	(0.197)
Survey fixed effect								
ALLBUS 2000	-0.786***	(0.0366)	-0.806***	(0.0391)	-0.806***	(0.0392)	-0.805***	(0.0392)
Control variables								
A3049	-0.00808	(0.0730)	0.0452	(0.0724)	0.0472	(0.0724)	0.0453	(0.0725)
A5064	-0.0488	(0.0851)	-0.0414	(0.0855)	-0.0415	(0.0855)	-0.0439	(0.0859)
A65	-0.122	(0.118)	-0.175	(0.125)	-0.174	(0.125)	-0.178	(0.125)
Fem	-0.0493	(0.0437)	-0.0795*	(0.0461)	-0.0796*	(0.0461)	-0.0794*	(0.0461)
UEnt	0.0450	(0.0577)	0.00554	(0.0605)	0.00443	(0.0605)	0.00399	(0.0605)
Uni	0.0140	(0.0737)	0.0461	(0.0792)	0.0496	(0.0797)	0.0475	(0.0795)
Marr	-0.0626	(0.0607)	-0.0981	(0.0623)	-0.0973	(0.0623)	-0.0968	(0.0623)
Div	0.0445	(0.0951)	-0.0229	(0.0971)	-0.0218	(0.0972)	-0.0225	(0.0972)
Wid	0.0995	(0.109)	0.0801	(0.117)	0.0806	(0.117)	0.0807	(0.117)
Inc1	-0.126	(0.0827)	-0.158*	(0.0861)	-0.155*	(0.0866)	-0.155*	(0.0867)
Inc2	-0.0959	(0.0787)	-0.145*	(0.0832)	-0.138*	(0.0839)	-0.139*	(0.0841)
Inc3	-0.115	(0.0699)	-0.157**	(0.0753)	-0.150**	(0.0762)	-0.152**	(0.0764)
Inc4	-0.129**	(0.0652)	-0.130*	(0.0698)	-0.127*	(0.0700)	-0.128*	(0.0701)
RInc	0.00101	(0.0784)	-0.0203	(0.0840)	-0.0167	(0.0844)	-0.0183	(0.0843)
Part	0.146*	(0.0855)	0.205**	(0.0902)	0.200**	(0.0906)	0.201**	(0.0906)
Self	-0.0754	(0.0818)	-0.0587	(0.0848)	-0.0551	(0.0849)	-0.0576	(0.0848)
Unem	-0.0763	(0.0855)	-0.0502	(0.0898)	-0.0458	(0.0899)	-0.0483	(0.0899)
Home	-0.0453	(0.0887)	0.0144	(0.0939)	0.0120	(0.0942)	0.0117	(0.0942)
Stud	0.165	(0.111)	0.130	(0.111)	0.132	(0.111)	0.131	(0.111)
Ret	-0.0181	(0.0855)	0.0413	(0.0929)	0.0405	(0.0929)	0.0391	(0.0930)
Constant	2.565***	(0.0770)	2.615***	(0.0803)	2.613***	(0.0805)	2.613***	(0.0805)
Observations	6,548		5,539		5,539		5,539	
r²	0.066		0.074		0.074		0.074	

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Reference category all columns ALLBUS 2002 survey, age younger than 30 years, male, less than university entrance education, single, highest income quantile within survey, full time employed. Reference category column (1) living in West Germany, column (2) born in West Germany, column (3) born and living in West Germany, column 4 born in West Germany.

6.2 East effect for a Berlin subsample

One may argue that effects of geography, such as population density and urbanity, result in pre-war regional heterogeneity. We respond by investigating a subsample of citizens of the city of Berlin. This city, the former and current largest city and capital of Germany, was until 1990 divided in a part belonging to East Germany and a part belonging to West Germany. To be precise, West Berlin had special status with administration formally conducted by the Western Allies, however, since 1950 West Berlin was a state of the Federal Republic and closely affiliated with remainder West Germany. As such, West Berlin was an enclave within East Germany. The key principle at the end of the war in 1945 of drawing the Berlin boundaries between the Soviet sector and the Allied sectors were correspondence with the occupation zones in the rest of Germany (Ahlfeld et al. 2012). Accordingly, eastern districts of Berlin including the historic center belonged the East Germany while the western districts belonged to West Germany.

This means, for citizens of Berlin there was a partition in East and West Germany, but there is only little variation in geography. Table 6 displays an overview of Berlin observations and unconditional tax morale differences between East and West Berlin. All investigated surveys include observations of both, West and East Berlin, albeit naturally with small sample sizes. For all surveys except the WVS 1997 and the ALLBUS 2002 we observe higher unconditional tax morale in East Berlin than in West Berlin. We estimate a regression with all observations, however due to the small sample sizes we do not include interaction terms and interpret only the estimate of effect of *East* which pools the effect for all surveys. Note, that the estimates include only observations of region of living. This means, within-country and within-Berlin migration diminishes differences. Because within-Berlin migration as well as West Germany-East Berlin migration is more common than within-Germany migration, we expect a smaller difference between East and West Berlin than between East and West Germany. Table 7 displays the results. This table includes OLS estimates with control only for survey fixed effects, OLS with

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all controls, an ordered probit regression as well as a probit regression using the binary tax morale measure. We find a positive effect of *East* on tax morale, which confirms the previous results for Germany. The effect is significant at a 10% level for the OLS without individual controls, the ordered probit and the probit, but not significant for the OLS with individual controls (p=11.6%).

Table 6: Overview of surveys conducted in Germany which include tax morale questions: unconditional tax morale difference between West and East Berlin

				Tax Morale	
No.	Survey name	Year	N	West	East
1)	EVS (2nd wave)	1990	164	.77 (.29)	.84 (.26)
2)	WVS (3rd wave)	1997	123	.86 (.22)	.75 (.28)
3)	EVS (3rd wave)	1999	135	.87 (.18)	.91 (.20)
4)	WVS† (5th wave)	2006	101	.84 (.22)	.90 (.20)
5)	EVS (4th wave)	2008	58	.64 (.34)	.88 (.17)
6)	ALLBUS	2000	121	.55 (.26)	.59 (.34)
7)	ALLBUS	2002	122	.54 (.27)	.49 (.32)
8)	ISSP Religion II	1998	140	.48 (.32)	.48 (.34)
9)	ISSP Citizenship	2004	49	.75 (.35)	.82 (.21)
10)	ESS (2nd wave): Question1	2004	162	.62 (.24)	.66 (.23)
11)	ESS (2nd wave): Question2	2004	162	.42 (.26)	.44 (.25)

Mean tax morale measures, standard deviation in parentheses. Tax morale measure linearly normalized separately for each survey to a scale between zero and one with one capturing high tax morale and zero capturing no tax morale.

N = number of observations

† No German data in first, second and fourth wave of the WVS.

† No state data in second wave EVS and third wave WVS.

6.3 The effect of regional inequality and income transfers

Today, there are strong economic differences between East and West Germany, in particular East Germans are on average poorer than West Germans. In the following we analyze the effect of regional and longitudinal economic heterogeneity on tax morale and on the effect of *East* on tax morale. Specifically, we include as additional control variable the net income transfer per capita of the federal state of residence, which consists of the

Table 7: Regression results, pooled survey, Berlin citizens, 1990-2008 with survey fixed effect

Dependent variable:	Tax Morale between 0 and 1						Binary Tax Morale	
Method:	OLS		OLS		Ordered probit		Probit	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
East Berlin	0.029*	(0.0156)	0.025	(0.0158)	0.128*	(.0661)	0.181**	(0.0896)
Survey fixed effects	Yes		Yes		Yes		Yes	
Control variables	No		Yes		Yes		Yes	
Observations	1,210		1,210		1,210		1,210	
r^2	0.275		0.325					
McFadden Pseudo r^2					0.112		0.223	

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

sum of tax revenue transfers between the federal states and income transfers from the federal government to the federal states.[4] This control directly measures the surplus of the regional benefit from the tax revenue relative to the regional tax burden[5], which constitutes a plausible economic explanation for regional tax morale heterogeneity. At the same time, this variable is highly correlated with other economic measures such as unemployment rates. We exclude the 1990 survey, because the fiscal equalization scheme in its current form was established 1995.

Table 8 displays an overview of the control variable. The East German federal states receive by far the largest net transfer per capita. In addition, there is also substantial

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[4]The German fiscal equalisation system (*Länderfinanzausgleich* and *Bundesergänzungszuweisungen*) reduces tax revenue differences between economically heterogeneous federal states: The total tax revenue partly is attributed to different levels of governance, for example, individual income tax belongs 42.5% to the federal government, 42.5% to the federal states and 15% to the municipalities. Before the adjustments, the individual federal states are entitled to the tax revenue for several taxes collected on their territory. The tax revenue for the federal states constitutes the base to calculate the financial capacity per capita. Federal states whose capacity exceeds the average provide adjustment payments (a part of the excess capacity) for federal states whose capacity falls below the average. One top of this, the federal government provides additional funds to federal states whose financial capacity, after financial equalisation among the federal states, is still below the average. This reduces the difference further but not completely.

[5]Alesina and Fuchs-Schündeln (2007) calculate a similar control variable which includes more components, for example the regional difference between inpayments and outpayments of social insurances. We focus on the two components because they are tax-based and detailed data is available by year and federal state.

variation over time and across federal states of West Germany. Table 9 displays regression results including the additional control. The estimated effect of the control variable is nonsignificant and the coefficient of *East* is unaffected. This result indicates that regional economic heterogeneity does not result in tax morale differences. Hence, the tax morale gap between East and West Germany can be attributed to attitudinal differences rather than economic differences.

Table 8: Fiscal equalization scheme net transfer per capita inflation-adjusted by federal state and survey year

	2008	2006	2004	2002	2000	1999	1998	1997
West Germany								
Schleswig-Holstein	115	90	135	158	245	157	70	75
Hamburg	-210	-374	-361	-127	-374	-236	-217	-97
Lower Saxony	60	47	155	181	224	219	178	161
Bremen	1,102	971	1,307	1,967	2,485	2,477	2,716	2,214
North Rhine-Westfalia	3	-8	-13	-100	-73	-85	-103	-103
Hesse	-407	-418	-272	-349	-519	-468	-342	-316
Rhineland-Palatinate	152	147	163	274	300	213	240	200
Baden-Württemberg	-232	-201	-220	-174	-214	-196	-201	-140
Bavaria	-233	-176	-202	-184	-178	-157	-145	-156
Saarland	229	234	573	750	986	1063	1252	1242
West and East Germany								
Berlin	1,784	1,728	1,685	1,719	1,621	1,599	1,520	1,435
East Germany								
Brandenburg	1,019	1,067	999	1,020	893	876	858	870
Mecklenburg-Vorpommern	1,192	1,201	1,112	1,146	987	965	954	940
Saxony	971	1,125	1,035	1,078	913	898	869	856
Saxony-Anhalt	1,356	1,157	1,091	1,129	963	943	915	903
Thuringia	1,131	1,166	1,075	1,112	961	936	926	915

Source: Ministry of Finance, *Länderfinanzausgleich* and *Bundesergänzungszuweisungen*.
Base year of inflation adjustment 2008.

6.4 Regional heterogeneity of faith

Bauernschuster and Rainer (2009) point toward a pre-1949 difference between German regions: The Protestant Reformation began in the 16th century in what later became East Germany. East German regions became predominantly Protestant while West German regions remained religiously heterogeneous. Cross-country studies indicate that

Table 9: Regression results including regional net transfer per capita control variable with survey fixed effect

| Dependent variable: | Tax Morale between 0 and 1 | | Binary Tax Morale | |
| Method: | OLS | | Probit | |
	Coeff.	SE	Coeff.	SE
Net transfer federal state	-1.65e-06	(5.35e-06)	-0.000011	(0.000029)
East	0.0341**	(0.0140)	0.288***	(0.0634)
Interaction survey fixed effects and East Germany				
East × EVS 1999	-0.0427**	(0.0168)	-0.263***	(0.0807)
East × WVS 2006	0.0252	(0.0156)	0.297***	(0.0819)
East × WVS 2008	0.0398***	(0.0152)	0.224***	(0.0814)
East × ALLBUS 2000	0.00576	(0.0196)	0.0451	(0.0908)
East × ALLBUS 2002	0.000671	(0.0177)	-0.116	(0.0818)
East × ISSP 1998	0.0241	(0.0198)	-0.102	(0.0874)
East × ISSP 2004	-0.0858***	(0.0211)	-0.488***	(0.0986)
East × ESS 2004 question 1	-0.0174	(0.0156)	-0.277***	(0.0829)
East × ESS 2004 question 2	0.0288*	(0.0166)	-0.104	(0.0946)
Survey fixed effects	Yes		Yes	
Control variables	Yes		Yes	
Observations	20,898		20,898	
r^2	0.174			
McFadden Pseudo r^2			0.326	

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

faith might affect tax morale, specifically Torgler (2006) finds a negative correlation of Protestantism and tax morale. This algebraic sign suggests that differences in faith today cannot explain the higher tax morale in predominantly Protestant East Germany.[6] However, the predominance of Protestant faith before 1949 might have persistent effects until today (e.g. Becker and Wössmann 2009; Cantoni 2010). We investigate whether pre-1949 differences in religious faith confound the east-west difference. Pre-war religious faith in West Germany was heterogeneous: While the regions of the today northern states Schleswig-Holstein, Hamburg, Bremen, Lower Saxony were predominantly Protes-

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[6]Note, that during the partition many East Germans gave up Christian faith to follow the atheistic state doctrine. Therefore, in contrast to the pre-war situation the East Germany of today is predominantly nonreligious with a Protestant minority. This change is another direct consequence of the political regime and may contribute to the *East* effect on tax morale.

tantic, the regions of Hesse, North-Rhine-Westphalia, Rhineland-Palatinate and Baden-Württemberg are mixed, while Bavaria and Saarland were predominantly Catholic.[7] We include an additional control variable *Protestant* indicating whether the respondent lives in West Germany and in a state which is not predominantly Protestant. This is at the same time a control whether tax morale differs between North and South Germany. To analyze differences between surveys we also include interaction terms of the survey fixed effect and *Protestant*. Table 10 displays the regression results. The additional control does not affect the significance of the *East* effect. Interestingly, respondents in Protestant states of West Germany have a higher tax morale in 1990, but overall the results are erratic and nonsignificant for most surveys. This result suggests that pre-war faith does not affect tax morale differences between East and West Germany.

7   Discussion

This paper presents updated and new evidence on the gap in tax morale between East and West Germany in the 2000s. Contrary to previous evidence we find a persistent gap and no indication of quick convergence. Torgler (2003) explains the tax morale gap as an effect of adherence to social norms indoctrinated by the regime. East Germany gradually internalized the norms they had been forced to observe. With respect to mechanisms behind the effect we find complementing results: The persistent gap points towards explanations based on a social norm or approval of tax revenue uses. Moral reasonings related to being a good citizen do not differ between East and West Germany, while other forms of moral reasoning do differ. This suggests a social norm or political culture based explanation. Within-country migration reduces differences. Economic regional heterogeneity cannot explain regional tax moral differences. This suggests that the east-west gap is a consequence of attitudinal differences rather than economic differences.

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[7]See Cantoni (2010) for details.

Table 10: Overall regression results, pooled survey 1990-2008 with survey fixed effect: Control for living in predominantly Protestant state in West Germany

| Dependent variable: | Tax Morale between 0 and 1 | | Binary Tax Morale | |
| Method: | OLS | | Probit | |
	Coefficient	SE	Coefficient	SE
East	0.126***	(0.00849)	0.776***	(0.0478)
Protestant regions West Germany	0.0392***	(0.0136)	0.202***	(0.0718)
Survey fixed effect	Yes		Yes	
Interaction survey fixed effects and Protestant regions				
Protestant × WVS 1997	-0.0222	(0.0256)	-0.325***	(0.126)
Protestant × EVS 1999	-0.0556**	(0.0218)	-0.411***	(0.125)
Protestant × WVS 2006	0.0374*	(0.0198)	0.271**	(0.126)
Protestant × EVS 2008	-0.0226	(0.0205)	-0.0349	(0.118)
Protestant × ALLBUS 2000	-0.0500*	(0.0257)	-0.274**	(0.137)
Protestant × ALLBUS 2002	0.0001	(0.0215)	-0.0904	(0.112)
Protestant × ISSP 1998	0.0325	(0.0300)	0.111	(0.135)
Protestant × ISSP 2004	-0.0514*	(0.0288)	-0.0418	(0.137)
Protestant × ESS 2004 question 1	-0.00875	(0.0191)	-0.0559	(0.114)
Protestant × ESS 2004 question 2	-0.0199	(0.0206)	-0.249*	(0.142)
Interaction survey fixed effects and East Germany				
East × WVS 1997	-0.0905***	(0.0163)	-0.525***	(0.0771)
East × EVS 1999	-0.138***	(0.0139)	-0.796***	(0.0771)
East × WVS 2006	-0.0520***	(0.0127)	-0.103	(0.0789)
East × EVS 2008	-0.0494***	(0.0119)	-0.235***	(0.0780)
East × ALLBUS 2000	-0.104***	(0.0166)	-0.558***	(0.0831)
East × ALLBUS 2002	-0.0859***	(0.0151)	-0.593***	(0.0776)
East × ISSP 1998	-0.0535***	(0.0179)	-0.526***	(0.0864)
East × ISSP 2004	-0.182***	(0.0189)	-0.958***	(0.0965)
East × ESS 2004 question 1	-0.105***	(0.0124)	-0.746***	(0.0791)
East × ESS 2004 question 2	-0.0606***	(0.0136)	-0.610***	(0.0925)
Observations	24,584		24,584	
r^2	0.286			
McFadden Pseudo r^2			0.186	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

A limitation of our empirical results is that dependent variables used are survey self-assessments and there are no financial rewards used to incentivize honest assessments. It would be interesting to analyze data on east-west differences of tax evasion behavior. Unfortunately, with the expection of estimates of shadow economies this data is not available. The problem with survey data is reduced by the embedding of the used questions in a questionnaire with a large number of other questions – that are partly more sensitive and the usage of face-to-face interviews conducted by trained interviewers. All

data sets employed are widely used in economic, as well as sociological and political research. Alesina and Fuchs-Schündeln (2007) point out that the substantial gap in voting behavior between East and West Germany is consistent with differences obtained in surveys.

Future research should pursue a deeper investigation of tax morale attitudes and the moral reasoning. A clean identification of different moral reasonings is possible in experimental designs. With experimental data it would be interesting to explore east-west differences in tax evasion behavior and responses to deterrence. Feld et al. (2008) more closely investigate the latter points.

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Contact:

Axel Möhlmann

Institute for Business Taxation

Leibniz Universität Hannover

Königsworther Platz 1

30167 Hannover, Germany

email: moehlmann@steuern.uni-hannover.de