

Exposure to Television and Individual Beliefs: Evidence from a Natural Experiment

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Abstract: Does the information provided by mass media have the power to affect individual beliefs on the drivers of success persistently? To answer this question empirically, this contribution exploits a natural experiment related to the availability of West German television broadcasts in the former German Democratic Republic (GDR). After identifying the impact of Western media on individual beliefs and attitudes in the late 1980s, longitudinal data from the German Socio-Economic Panel (GSOEP) is used to test the persistence of the television effect on individual beliefs during the 1990s. The empirical findings indicate that Western television exposure has made East Germans more inclined to believe that effort rather than luck determines success in life. Furthermore, the effect of media on beliefs still persists several years after the German reunification.

Key Words: media, beliefs, East Germany, GSOEP

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1 Introduction

What makes an individual believe that factors like “effort” or “luck” determine success in life? Or to put it more broadly: Where do different economic beliefs come from? The relevance of economic beliefs is by now widely acknowledged for welfare state preferences as well as for economic and institutional outcomes. Despite their importance, the knowledge about specific impact factors in the formation of economic beliefs is still incomplete. Thus, this contribution aims at providing further insights in the belief formation by focusing on one potential determinant: The set of information provided by television.

To test whether television has the power to shape economic beliefs and more general attitudes towards the state, I exploit a natural experiment related to West German television reception in the former German Democratic Republic (GDR). While the majority of East Germans was able to watch West German television, approximately 15% of the population living in the southeast and the outermost northeast of the GDR had no access to these broadcasts either due to geographical or topological reasons. The set of information provided by these competing mass media differed considerably since the state-controlled GDR television was used as an instrument of indoctrination of East German citizens. Given their main objective, these media sources differed both in the coverage of certain topics and the framing of information. Motivated by these differences, I will use the exogenous variation in Western television reception to identify the impact of West German television on economic beliefs. GDR survey data collected in 1988/89 is used to test the effect of Western television on economic beliefs and attitudes towards the GDR. Moreover, I make use of longitudinal data from the German Socio-Economic Panel (GSOEP) to analyze the long-term effect of differential access to Western mass media on individual beliefs up to one decade after the German reunification.

This paper relates to the work on belief formation as well as to the literature on the impact of media (bias) on individual attitudes. To form their beliefs, individuals have to gather information from several sources. The existing literature stresses the relevance of personal experience in the formation of economic beliefs. Piketty (1995) points to the role of experienced social mobility as a way people can learn about the relative importance of individual effort compared to predetermined factors like luck or birth. In line with this, Giuliano and Spilimbergo (2009) show that the experience of a deep recession during young adulthood has a lasting impact on economic beliefs as well as on redistributive preferences.

Apart from direct personal experience, cultural factors (defined broadly) also seem to matter as economic beliefs and, thus, norms about the acceptable degree of inequality differ among societies. The observation that U.S. Americans and Europeans entertain different beliefs on the drivers of economic success (Alesina et al., 2001) points to the role of different

historical experience in belief formation. While the belief that effort determines success is predominant in the U.S., Europeans are more inclined to stress the relevance of luck or social conditions. Furthermore, these beliefs may be self-fulfilling as Alesina and Angeletos (2005) show that they result in multiple equilibria of state redistribution. The European equilibrium is characterized by a high level of distortive taxation which increases the relative importance of luck and, thus, the demand for redistribution. The American equilibrium on the other hand has low taxes, a low degree of inequality which is a result of factors that are within the individual's control, and also a lower demand for redistribution. Thus, observable international differences may originate from historical factors but are also confirmed by individual experience. Evidence on cultural factors is also provided by Alesina and Fuchs-Schündeln (2007) who exploit the German separation and reunification as a natural experiment. The authors show that the socialization under communism has made East Germans more inclined to favor state interventions than their West German fellow citizens even several years after reunification. This socialization can be understood as a combination of various features of life in the former GDR since the citizens got used to an active role of the government and were confronted with communist indoctrination via state-controlled schools and media. Consequently, this paper focuses on one specific part of this broad aspect of socialization, namely the impact of television on individual beliefs and attitudes towards the state.

Mass media (like television) are a major source of information on a variety of political, economic, and societal issues. It is by now well established that media affects behavior and attitudes either via the coverage of certain topics or the framing of information (a comprehensive survey on the role of media is provided in Prat and Strömberg, 2011). DellaVigna and Kaplan (2007) show that the introduction of the conservative television channel Fox News has affected U.S. voting behavior in favor of the Republicans. Furthermore, active newspaper coverage of U.S. congressmen increases the voters' information about the candidates and, thereby, the representatives' political accountability (Snyder and Strömberg, 2010).

Apart from political behavior, media also alters more general individual values and attitudes. Gentzkow and Shapiro (2004) show that biased reporting by mass media correlates significantly with attitudes towards the U.S. in the Muslim world: Compared to the CNN International audience, individuals watching Al Jazeera tend to be less in favor of the U.S. and also more likely to consider the 9/11 attacks as justifiable. Using the regional variation in access to Western television, Kern and Hainmueller (2009) find that East Germans able to watch Western television were more likely to support the GDR regime and to agree with socialist ideologies. Indicating that television may have a rather subtle impact on individual attitudes and values, Jensen and Oster (2009) relate the introduction of cable television to women' status in Indian villages. Learning about different ways of life (e.g. the status of

urban women as presented in soap operas) improved the attitudes towards women in rural areas.

The empirical findings of this paper indicate that Western television exposure has made East Germans more inclined to stress the importance of effort relative to luck as a determinant of success in life. The differential access to television broadcasts of the Federal Republic of Germany (FRG) in the GDR is still reflected in personal beliefs up to the late 1990s. Furthermore, individuals who had the opportunity to watch Western broadcasts were more satisfied with the situation in the GDR and more optimistic about the future economic and democratic development in socialist states. These differential attitudes towards the specific situation in the GDR, however, diminished soon after the inner-German border had opened since their assessment is highly context-dependent. The impact of Western television on economic beliefs is more persistent.

This paper's contribution to the literature is threefold. First, I analyze the effect of a permanent exposure to information provided by biased media. As a group of individuals had also access to an additional media source with the possibility to get further and considerably different information, it is possible to gain comprehensive insights on the impact of the media bias on a wide range of personal attitudes towards the state and economic beliefs.

Second, exploiting a natural experiment on the regional availability of FRG television broadcasts in East Germany enables me to identify the causal effect of television. The estimates of media studies which do not use any exogenous variation in media access mostly suffer from a potential reverse causality problem: Does a person entertain a certain attitude because of television reports, or does this person watch a specific broadcast because its reporting is in line with his or her prior attitude?

Third, the existing literature, so far, offers no information on the dynamics of media effects. By using two different data sets, I provide not only evidence on the "immediate" impact of Western television in the late 1980s but also on its development after reunification. This contribution offers, thus, valuable insights on the effect of television in shaping long-lasting personal beliefs.

This paper proceeds as follows: Section 2 provides some institutional facts on television in the GDR. The subsequent part offers some insights in the role of Western television for the formation of beliefs and attitudes towards the state. Section 4 is devoted to the description of the empirical strategy and the data. The empirical results are presented in section 5 followed by some robustness tests in section 6. Concluding remarks are offered in section 7.

2 Institutional background: Television in the former GDR and the “Valley of the Clueless”

Following World War II, Germany was separated by the allied forces and in 1949 two independent German states were founded. While these states did not differ substantially before their separation (Alesina and Fuchs-Schündeln, 2007), 40 years of different political and economic systems induced a strong divergence in terms of economic welfare and general living standard of the population. GDR citizens were, however, not only confronted with economic scarcity but also faced repression by the state authorities. In November 1989, the unexpected opening of the inner-German border by the GDR regime resulted in the fall of the Berlin wall. After this historical event, the reunification of the two German states occurred rather quickly, with the economic and monetary union coming into force in July 1990, and the political integration of the former GDR into the system of the FRG in October 1990.

Television in the GDR

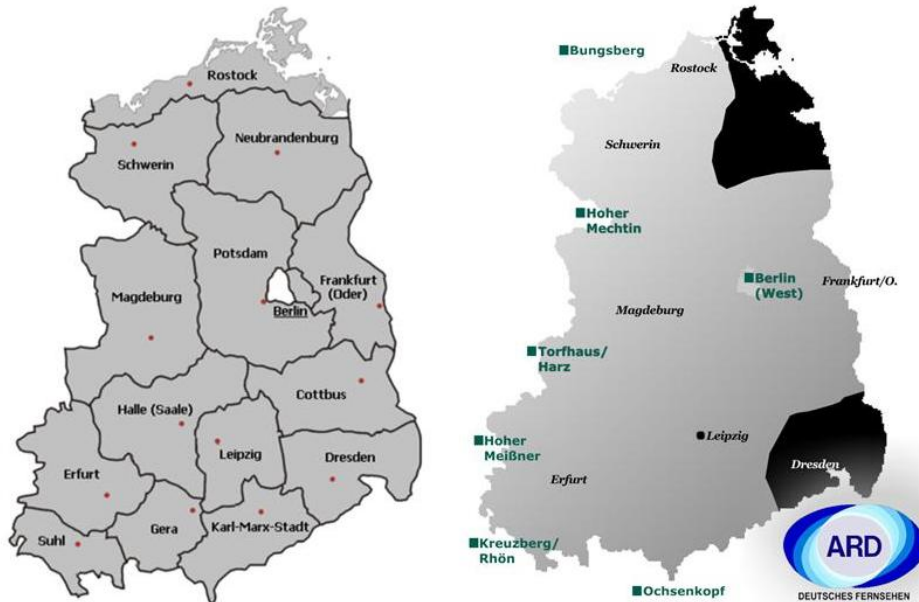
In both German states, the first television broadcasts were founded in 1952. The state-controlled television of the GDR consisted of two channels, DFF and DFF 2, which started their regular broadcasting in 1956 and 1969. In West Germany, two public television broadcasts exist, the First German Television (ARD) with its regional constituent broadcast institutions, and since 1963 also the Second German Television (ZDF). In February 1990, the GDR parliament declared the East German television broadcasts to be politically-independent public stations. Finally, in the course of the political reunification, the GDR stations were integrated into the FRG broadcasting system.

In 1955, only 1.2% of the GDR households had a television set, the availability of television, however, strongly increased in the 1960s and 1970s. In 1988, about 96 of 100 GDR households had at least one television set (Statistisches Amt der DDR, 1989). From the 1950s to 1990, GDR citizens could in principle choose between the two competing media sources provided by the GDR and the FRG. The majority was able to receive West German television (i.e., usually the main public stations ARD, ZDF, and a regional broadcast station). By watching FRG television, the people were able to get further insights into the Western world and its way of life, alternative information on world politics, and also on the situation in the GDR that had not been provided by the state-controlled GDR media.²

²West German television stations were very popular among GDR citizens both as a source of political information and entertainment. The regime had been well aware of this popularity. In the 1960s, the authorities took several measures to prevent the use of West German television (e.g. the removal of antennas directed to the West). In the 1970s, however, Erich Honecker stated that everyone could use Western media sources as he or she wanted to. At latest in the 1980s, watching FRG television has been normal for the citizens (Stiehler, 2001). The public television of the GDR addresses this in its reporting. For example, the main objective of the weekly show *Der Schwarze Kanal* was to criticize FRG television

However, this had not been the case for approximately 15% of the GDR population (Etzkorn and Stiehler, 1998) living either in the outermost Northeast around Greifswald or in the southeastern corner of the GDR. These regions - also called the “Valley of the Clueless” - were not able to receive the terrestrial television signals of West German transmitters either for geographical or topological reasons (i.e., they were too distant or surrounded by mountains). Figure 1 depicts the availability of the FRG television channel ARD within the GDR as well as the 15 political districts of the GDR. The dark areas mark the two regions without ARD reception that coincide almost perfectly with the district of Dresden and parts of the districts Neubrandenburg and Rostock.

Figure 1: WEST GERMAN TELEVISION RECEPTION IN THE GDR



Shown are the GDR administrative districts (left) and the availability of the West German television broadcast station ARD in the GDR (right). The rectangles denote West German transmitters and the dark areas indicate regions without West German television reception.

Table 1 presents survey data on the frequency of watching West German television in 1988/89 for 8 of the 15 GDR-districts. The self-reported intensities of FRG television use are in line with its general popularity. The average respondent watched FRG broadcasts almost every day. Respondents from the Dresden district, however, watched Western television significantly less often than those living in other parts of the GDR. 63.5% of the respondents

news.

Table 1: FREQUENCY OF WATCHING WEST GERMAN TELEVISION

District	How often do you watch FRG television?					
	Never (in %)	Obs.	Mean	Std.Dev.	Median	missings
Dresden	63.52	734	4.2956	1.2277	5	50
Berlin	0.24	416	1.5	0.7793	1	3
Cottbus	1.67	60	1.2833	0.7153	1	0
Erfurt	1.23	641	1.4009	0.7583	1	8
Karl-Marx-Stadt	2.05	622	1.5097	0.816	1	11
Leipzig	5.42	274	1.8504	1.1812	1	3
Magdeburg	1.09	542	1.3524	0.7241	1	7
Schwerin	1.04	191	1.4712	0.9049	1	1

How often do you watch West German television? (1) every day, (2) more than once a week, (3) once a week, (4) less than once a week, (5) never. (*Source:* GDR survey data (1988-89), (Zentralarchiv für Empirische Sozialforschung (GESIS-ZA), n.d.)

living in the Dresden-district declared that they did not watch these television stations at all.³

3 The role of Western television in belief formation

The main objective of this paper is to identify the long-term effects of Western television exposure on individual attitudes and beliefs. The information provided by West and East German television broadcasts was considerably different either with respect to the coverage of certain topics or the ideological bias in reporting.⁴ Thus, it is reasonable to expect different attitudes between individuals who did have access to FRG television and those who did not - the control and treatment group - before reunification. The direction of the FRG television effect on people's attitudes, however, is not a priori clear. A straightforward hypothesis would be that individuals not exposed to the information provided by Western media (and consequently had to rely on the biased reporting of GDR media) have more positive attitudes toward the GDR and agree more with the basic features of the Marxist-Leninist ideology (e.g. that inequality is mainly the societies' fault). Existing evidence indicates the opposite effect of Western media as individuals living in the valley were more critical toward the GDR regime and socialism (Kern and Hainmueller, 2009). One possible interpretation for this

³Hesse (1988) presents a quite similar regional pattern of FRG television behavior based on biographical interviews with GDR emigrants in a transit camp.

⁴East German television reports did, for example, not cover the demonstrations in autumn 1989 but focused on issues related to the 40th anniversary of the GDR. Even if certain issues were covered, the framing differed substantially from that in Western reports. When reporting about the Tiananmen Square massacre, GDR media endorsed the position of the Chinese regime.

finding is that West German television news had also provided information about negative aspects of capitalism (e.g. unemployment, inequality, crime, or drug abuse). A person who got this information might be less likely to see life in the FRG through rose-colored glasses and the awareness of the dark-sides of capitalism would have increased the confidence in the advantages of socialism (Hesse, 1988). Another interpretation might be that East Germans had watched Western television not only for political information but mainly for entertainment: Every evening East Germans watched Western television to escape their dull everyday life characterized by economic scarcity (Meyen, 2002). This may explain both a higher satisfaction with the real-existing socialism among those watching Western television but also a higher agreement with beliefs and norms more common in the FRG than in the GDR. Jensen and Oster (2009) show that television can change values and attitudes also via entertainment programs (e.g. soap operas) since they provide information on the outside world with its different ways of life. Since FRG television had been a “window to the Western world” for East Germans, they were confronted with different norms and beliefs on the drivers of success which they might have adapted.

But is it reasonable to expect any difference in beliefs or attitudes toward the state resulting from differential access to Western media to survive the tremendous events following November 1989 which changed the life of East Germans from one day to another? Soon after the fall of the Berlin wall, individuals in the valley also got access to Western media and even more important, all GDR citizens had the opportunity to learn about West Germany by own experience. In 1990, East Germany finally adopted the political and economic system of the FRG. Given this “reunification shock”, it is difficult to set up any straightforward hypotheses about the persistence of the impact of Western television exposure: On the one hand, it is possible that any observable difference in attitudes between the treatment and control group diminished soon after the fall of the Berlin wall (i.e., media exposure has no lasting impact on individual beliefs but only affects the assessment of current events). On the other hand, personal beliefs on the functioning of the economy and society might persist once they have been set at a critical age or change only slowly afterwards (as shown by Giuliano and Spilimbergo, 2009).⁵ One might also expect that differences in the assessment of socialism or several aspects of the GDR will diminish soon after reunification as they might be highly context-dependent, while general beliefs on the determinants of success are more persistent.

⁵But even if the beliefs are persistent, it is difficult to make any predictions on the long-term impact of Western television access as a person living in the valley (treatment region) might be more severely hit by the reunification shock than a person who has learned more about life in West Germany before reunification through Western media.

4 Empirical strategy and data

Empirical strategy

A naive econometric approach to analyze the impact of media on individual attitudes and beliefs is a regression of these attitudes on (self-reported) use of television broadcasts. Doing so, the identification of the causal television effect will be difficult as an individual's decision for a certain television station might be driven by a self-selection based on prior attitudes or preferences. In psychology, this phenomena is known as cognitive dissonance (Festinger, 1957), meaning that individuals tend to search for information that confirm their prior opinion: Individuals favoring socialist policies will be, for instance, more likely to expose themselves to information provided by East German media. Thus, the negative correlation between Western television use and support for socialist policies can not be interpreted as a causal impact of television. To overcome this reverse-causality problem, I will exploit the exogenous variation in access to these broadcast stations (a similar approach is used e.g. in DellaVigna and Kaplan, 2007). Hence, the main variable of interest is a dummy which indicates whether the respondent lives or had lived in the "Valley of the Clueless".⁶ The parts of the GDR without Western television reception had coincided almost perfectly with the district of Dresden as well as partially with the districts Rostock and Neubrandenburg (see Figure 1). For the latter no data is available, thus, I will use a *Dresden*-dummy. In the first part of the empirical analysis, this variable is equal to one if a person lives in the Dresden-district and zero for individuals from the remaining seven districts for which data is available.⁷ The second part of the analysis is based on GSOEP data for the 1990s which has been combined with additional geographical information to identify the respondent's place of residence in June 1990 at the level of regional planning units (*Raumordnungsregionen*).⁸ The regional indicator variable equals one for individuals living in the former district of Dresden i.e., the regions Dresden and Oberlausitz in June 1990. This variable remains unchanged over time and, therefore, allows to measure the long-term impact of FRG television in the former GDR by tracking the treatment group irrespective of their current place of residence.

Identifying assumptions

The identification of the causal effect of television exposure on individual beliefs and attitudes by focusing on the respondent's place of residence in the valley relies on the assumption that

⁶As information on actual use of FRG television is also available at the individual-level in the GDR survey data, it would be possible to use an IV-approach. The second part of my empirical analysis is, however, based on data from the GSOEP for which this information is not offered. To enhance the comparability of the results, I will estimate the reduced-form equation.

⁷These districts are Berlin, Cottbus, Erfurt, Karl-Marx-Stadt, Leipzig, Magdeburg, and Schwerin.

⁸These are regional units which are smaller than the regions at the NUTS 2-level but bigger than counties.

the treatment group (i.e., individuals living in the Dresden-district) is on average comparable to the control group (i.e., persons living in other parts of the GDR). Thus, the only systematic difference between the two groups should be FRG television reception.

First, this requires the absence of differential policy preferences or beliefs before television broadcasting began in the 1950s. Table 2 offers information on voting behavior at the Reichstag election of 1924 for electoral districts located in areas that became part of the GDR after World War II. The constituency “Dresden-Bautzen” is geographically mostly identical to the Dresden-district in the GDR. Dresden seems to be not systematically different from the other East German constituencies in the 1920s either with respect to voter turnout or vote shares of the most prominent parties in the Weimar Republic. Especially, the total vote share of the two leftist parties, the communist party (KPD) and the social democrats (SPD), accounts for 49.4% in Dresden-Bautzen, which is almost identical to the average of 49.7% in all East German districts, although the distribution of votes among these two parties differs somewhat.

Table 2: ELECTORAL OUTCOMES IN THE REICHSTAG ELECTION 1924 BY CONSTITUENCY

Electoral district	Voter turnout	Party vote share						
		KPD	SPD	Zentrum	DDP	DVP	DNVP	NSDAP
Dresden-Bautzen	79.8	10.3	39.1	1.4	6.1	10.9	11.5	1.8
Berlin	78.9	29.6	34.0	3.3	6.8	4.3	15.7	1.4
Chemnitz-Zwickau	77.4	16.2	33.5	0.5	4.1	11.1	9.1	4.4
Frankfurt (Oder)	78.7	6.0	33.1	6.0	4.3	8.4	29.6	1.0
Leipzig	83.4	16.1	37.0	0.6	6.0	13.0	6.6	1.9
Magdeburg	84.4	7.2	43.0	1.7	5.2	14.1	16.2	1.7
Mecklenburg	78.3	5.6	41.7	0.7	3.4	9.4	16.3	2.0
Merseburg	78.2	24.4	23.8	1.4	4.6	10.3	21.4	2.7
Potsdam I	78.6	17.1	34.6	2.1	5.5	6.6	22.8	1.7
Potsdam II	78.0	17.5	30.6	3.0	9.9	9.2	21.4	1.8
Thuringia	75.1	12.5	33.3	4.1	3.9	11.1	8.2	3.7

Vote shares and turnout by constituencies in the election of the Reichstag in May, 1924. The electoral district of Dresden-Bautzen mainly coincides with the district of Dresden. (Source: (Statistisches Reichsamt Deutschland, 1926))

Second, the treatment and control group should, in general, be comparable with respect to characteristics - other than access to Western television - which have an impact on individual attitudes. Dresden was one of the most advanced industrial regions in the German Reich and the city of Dresden (the so-called “Elbflorenz”) has been famous for its culture and architecture. The district does, however, not only include the city but also rural areas near the borders to Poland and the Czech Republic.

Table 3: COMPARISON OF GDR-DISTRICTS

	(1)	(2)	(1)-(2)	(3)	(1)-(3)	(4)	(1)-(4)	(5)	(1)-(5)	(6)	(7)	(6) - (7)
	Dresden	GDR	(p-value)	excl. Berlin	(p-value)	excl. Rostock & Neubrandenburg	(p-value)	Saxony	(p-value)	Valley	GDR	(p-value)
Population density	254	363.14	-109.14 (0.6235)	146.92	107.08 (0.0002)	408.25	-154.25 (0.5534)	285	-31 (0.3193)	146.33	408.25	-261.92 (0.6226)
Female population (% district pop.)	52.6	51.88	0.72 (0.0006)	51.84	0.76 (0.0006)	52.01	0.59 (0.0030)	52.85	-0.25 (0.4120)	51.6	52.01	-0.41 (0.3193)
Working age population (% district pop.)	62.9	65.1	-2.2 (0.0000)	64.92	-2.02 (0.0000)	65.03	-2.13 (0.0000)	63.75	-0.85 (0.3656)	64.63	65.03	-0.4 (0.6049)
High educated workers (% working age pop.)	20.6	20.08	0.52 (0.6302)	19.09	1.51 (0.0022)	20.1	0.5 (0.6894)	18.85	1.75 (0.5177)	20.17	20.1	0.07 (0.9796)
Relative Labor Income (GDR average 100)	99	100.71	-1.71 (0.0931)	100.54	-1.54 (0.1513)	101.08	-2.08 (0.0739)	98.5	0.5 (0.7952)	98.67	101.08	-2.41 (0.2928)
Industrial employment (% total empl.)	42.8	35.26	7.54 (0.0112)	36.03	6.77 (0.0244)	37.39	5.41 (0.0501)	44	-1.2 (0.8187)	29.27	37.39	-8.12 (0.1908)
Agricultural employment (% total empl.)	8.1	12.56	-4.46 (0.0260)	13.45	-5.35 (0.0073)	11.19	-3.09 (0.0806)	7.15	0.95 (0.5604)	16.53	11.19	5.34 (0.0000)
Industrial production (% GDR ind. prod.)	10.7	6.37	4.33 (0.0010)	6.44	4.26 (0.0023)	7.01	3.69 (0.0062)	10.15	0.55 (0.8536)	5.27	7.01	-1.74 (0.5066)
Hospital beds (per 10,000 inhabit.)	95.7	98.77	-3.07 (0.3832)	97.46	-1.76 (0.6131)	99.22	-3.52 (0.3879)	105.8	-10.1 (0.5842)	95.97	99.22	-3.25 (0.6979)
Theater visitors (% district pop.)	0.0019	0.0015	0.0004 (0.0279)	0.0014	0.0005 (0.0051)	0.0015	0.0004 (0.0189)	0.0014	0.0005 (0.0340)	0.0018	0.0015	0.0003 (0.3634)

Comparison of mean values for treatment and control groups. The treatment group includes either (1) Dresden or (6) all districts without full access to West German television (Dresden, Neubrandenburg, and Rostock). *Sources:* Statistisches Amt der DDR (1989), population density and share of female population (Statistisches Amt der DDR, 1990), labor income and share of working population with university degree (Kind, 1997).

Table 3 compares the Dresden-district with other districts in the GDR with respect to several characteristics. Dresden is - compared to the GDR-average - more industrialized, and its inhabitants seem to have a higher cultural interest as indicated by a higher share of theater visitors relative to the district population. The fact that Dresden was an important industrial region already before World War I might have improved its starting position after reunification. The traditional industries in Dresden (as well as other parts of Saxony, Berlin, and Magdeburg) established before 1945 were more likely to have a comparative advantage than “the planned industries” which had been mainly substitutes for sectors located in the FRG (Grundmann, 1997).

To take these differences between the Dresden-districts and other parts of the GDR into account, I will control for several district-level characteristics in the baseline specification (e.g. population density, share of agricultural and industrial employment) as well as for the regional unemployment rate after reunification. Furthermore, I will also provide tests for alternative explanations for the empirical findings which are, for example, related to the fact that individuals from Dresden might be more affine to culture and arts or that public investments in infrastructure were lower in this region. Finally, I will test the robustness of the results by using different control groups.

First, I will compare individuals living in the Dresden-district to people in the remaining seven districts (Berlin, Cottbus, Erfurt, Karl-Marx-Stadt, Leipzig, Magdeburg and Schwerin; in the second part of the analysis also observations from the districts Frankfurt, Gera, Halle, Neubrandenburg, Potsdam, Rostock, and Suhl will be used).⁹ Then, Berlin will be excluded from the sample since it is not fully comparable to the other districts due to its position as the capital of the GDR. In the analysis based on GDR data, I will exclude the 60 observations from Cottbus in order to confirm that the results are not driven by a selective sample in this district. Finally, the control group will be restricted to the remaining Saxon districts (Leipzig and Karl-Marx-Stadt). The Saxon districts not only share a common history as parts of the Kingdom of Saxony which may lead to a common culture and values but are also highly comparable with respect to other characteristics.¹⁰

The main challenge to my identification is migration since this raises the possibility of self-selection. The question of interest is, whether television changes individual beliefs and attitudes toward the state. The spatial mobility in the GDR, however, had been very low during the 40 years of its existence. This was a consequence of the central-planned economy with the strong regional specialization on certain sectors or industries that hampered the free

⁹The comparison of district-level characteristics as shown in Table 3 is also provided for the sample used in the first part of my analysis (see Table 17 in the appendix). The differences between treatment and control group are smaller if the control is limited to the seven districts in this sample.

¹⁰In the second part of the empirical analysis, I will also assign individuals who had lived in the outermost north-east of the GDR (region around Greifswald-Stralsund) to the treatment group. This region had, however, at least partial access to Western television.

allocation of labor as a factor of production. Furthermore, the GDR had faced a considerable housing shortage that further limited mobility. Table 4 shows official statistics on internal migration in 1988 by district. There were some internal population movements with Berlin attracting additional inhabitants at the costs of all other districts (except for Gera). In general, a considerable part of all movements took place within the districts (in the Dresden-district these movements account for nearly 55 percent). In 1988, the net population outflow by district ranged from 0.52 to 1.54 percent of the total population, with Dresden being located at the lower end of this range.

Table 4: INTERNAL AND EXTERNAL MIGRATION IN THE GDR 1988/89

District	Internal migration (1988)			Cross-border migration (1989)		
	net inflow	within district	across district borders	net outflow (share of total population)	gross emigration	emigrants (share of total population)
Dresden	-2272	54.54	12450	0.70	46017	2.62
Berlin	21172				33683	2.62
Cottbus	-1956	49.22	8737	0.99	13516	1.53
Erfurt	-621	50.85	8162	0.66	20445	1.65
Frankfurt	-1170	36.56	10941	1.54	10788	1.51
Gera	168	51.99	6164	0.83	15632	2.11
Halle	-5894	52.14	16479	0.93	27319	1.54
Karl-Marx-Stadt	-139	61.47	9733	0.52	40347	2.17
Leipzig	-2808	44.82	13012	0.97	30654	2.25
Magdeburg	-1405	52.50	9278	0.74	14761	1.18
Neubrandenburg	-2356	41.34	8254	1.33	4590	0.74
Potsdam	-467	42.45	12395	1.10	17026	1.52
Rostock	-1145	46.29	9970	1.09	11279	1.23
Schwerin	-848	46.02	6049	1.02	6029	1.01
Suhl	-259	43.42	4045	0.74	4872	0.89

Source: Information on internal migration based on Statistisches Amt der DDR (1989) and Statistisches Amt der DDR (1990) for cross-border migration.

After the Berlin wall was built in August 1961 approximately 750,000 people emigrated from the GDR until 1989 (Maretzke, 1991). The GDR statistical office provided official data on cross-border migration in 1989 (column 6 and 7 of Table 4). The GDR regime had opened the borders to the FRG in November and, thus, gave the citizens the opportunity to emigrate. Already in 1989, within two months after the borders had been opened around 297,000 people left the GDR.¹¹ The emigration as a percentage of total district population ranges from 0.74 in Neubrandenburg to 2.62 in Berlin and Dresden. Compared to individuals in other districts, persons from Dresden were more likely to leave the GDR, although this difference is not large. In principle, this highlights the importance of being aware of a possible self-selection for the analysis of attitudes from 1990 onwards. By making use of a longitudinal dataset like the GSOEP, I can control for spatial mobility once the treatment

¹¹During summer of the same year, approximately 17,000 GDR citizens emigrated to West Germany via the embassy of the FRG in Prague. It is, however, not clear whether these emigrants are counted in the official statistics presented above.

and control group have been identified based on data from June 1990.¹²

Data

For the purpose of this paper, I will exploit two different data sources. One data set is used to identify the impact of Western television on East Germans' attitudes and beliefs in 1988/89, while another one is employed to analyze the persistence of the FRG media effect several years after the German reunification.

The first part of my analysis, the identification of the television effect, relies on survey data conducted between November 1988 and February 1989 by the central institute for youth research ("Zentralinstitut für Jugendforschung") in Leipzig.¹³ The sample consists mostly of teenagers and young adults employed in preselected companies located in 8 of the 15 GDR districts.¹⁴ Next to socio-economic information on the respondents, the data includes a rich set of individual attitudes towards the GDR and FRG, socialism as well as on more general beliefs since the primary objective of this survey had been the collection of information about the citizens' assessment of the political climate and societal conditions in the GDR. Finally, and most relevant for the purpose of this paper, the data allows the assignment of a respondent into areas with and without access to Western television based on his or her district of residence.

In order to identify the Western television-effect, I make use of several survey questions related to attitudes towards the GDR, the socialist ideology and reality as well as to beliefs on the relevance of individual effort as a driver of success.¹⁵

The primary interest of this paper is on the formation of individual beliefs on the determinants of success. To capture the respondents' beliefs, I use their agreement with the following statement: "I have made the experience that a high level of effort pays off for the society and also for myself." The corresponding dummy-variable EFFORT PAYS OFF is equal to one for respondents who (totally) agree with this statement.¹⁶ A further proxy for economic

¹²I have dropped persons living in households which had moved since 1988 to avoid an erroneous assignment of respondents into treatment or control group.

¹³Several GDR survey datasets have been collected by the GESIS-ZA and made available for social research. In general, one might be skeptical about the reliability of data collected by GDR institutions as the respondents may not revealed their true opinions due to fear of political prosecution or disadvantages for their future life or career. However, the researchers had guaranteed anonymity by distributing the questionnaires to a group of participants, gave them the opportunity to answer them on their own and collected them altogether afterwards (Stiehler, 1998). This process seemed to work as many respondents had given critical answers e.g. to questions concerning the regime and authorities.

¹⁴In general, the collection of data for social research had to be permitted by GDR officials who also controlled the questionnaires in advance. The permission to draw a representative sample was often denied (Etzkorn and Stiehler, 1998). The sample used here, had been also drawn from a population of companies representative for the GDR as a whole.

¹⁵More detailed information on the survey questions and the corresponding variables used in the empirical analysis is offered in the appendix (Table 21).

¹⁶To allow for a straightforward interpretation of the empirical results, all dependent variables have been

and political preferences is the affirmation of the socialist ideology. The variable MARXIST-LENINIST equals one for respondents (totally) approving the Marxist-Leninist worldview. One feature of this worldview is the belief that social conditions are responsible for inequality which also implies a high demand for state interventions. But since the agreement to the predominant ideology of the GDR comprises far more than these attitudes, the results should not be over interpreted.

In addition to general beliefs, attitudes towards socialism and the GDR are likely to be affected by Western television consumption. Therefore, I will also include the respondents confidence in the future economic and democratic development in socialist states as well as their degree of satisfaction with life in the GDR, and the provision of information by GDR media. The variables SOCIALIST ECONOMIES and SOCIALIST DEMOCRACY are equal to one if a respondent is (totally) confident in the future development of socialist economies or the democracy in the GDR until the year 2000. It is reasonable to expect that the assessment of the economic and democratic situation is affected by the individual's level of information as provided by the media: While GDR mass media had drawn an overoptimistic picture on the prospects of economic development or the democratic system (e.g. by avoiding negative reporting on the economic situation), the Western reports provided such information. Thus, a straightforward hypothesis would be that individuals only exposed to information from GDR media should be more optimistic. As realities in the GDR, however, were different and citizens were confronted with both economic scarcity and political prosecution, the positive reporting by television may not have convinced the audience but had the opposite effect.

The confidence in the reporting of GDR media is also directly captured by the variable GDR MEDIA which is equal to one for respondents who think that East German press, radio, and television provide exhaustive information on recent events. Finally, the individuals' general assessment of life in the GDR is included as the dependent variable LIFE GDR. For respondents who like living in the GDR this variable is coded equal to one.

After identifying the effect of exposure to FRG television on individual attitudes, the second part of my analysis is devoted to its persistence. For this purpose, I make use of data from the German Socio-Economic Panel (GSOEP). The GSOEP is a longitudinal study of private households designed to be representative for the German population. While for West Germany the survey has been conducted annually since 1984, the GSOEP expanded to include the former GDR in June 1990. I focus on the "SOEP East" sample that includes 2,179 households with 4,453 members surveyed in 1990.

Next to comprehensive data on socio-economic characteristics, the GSOEP offers information on individual beliefs about the determinants of success and the assessment of several

coded as dummy-variables.

aspects of life in the GDR.¹⁷ While the main interest of this paper is on general economic beliefs, the questions concerning the situation in the GDR were already asked in 1990 and are, thus, included to increase the comparability with the results of the first part of my analysis and to further test the persistence of these attitudes.

The GSOEP includes questions referring to individual beliefs which were asked in the years 1994-96 and in 1999. The variable LUCK is equal to one if the respondent claims that achievement in life is mainly a matter of luck.

Finally, the first wave of the GSOEP conducted in East Germany includes questions on the satisfaction with the democracy and the social security in GDR. The variables DEMOCRACY GDR and SOCIAL SECURITY GDR are equal to one if the respondent is (very) satisfied. Furthermore, the binary variable LIFE GDR captures the general satisfaction with the standard of living in East Germany from 1991-93.

The summary statistics presented in Table 19 already indicate that at the end of the 1980s persons living in Dresden seem to be less content with several aspects of the GDR, and show a lower agreement with the socialist ideology as well as a lower inclination to believe that effort determines success in life. In the 1990s, the differences between the groups are somewhat smaller but still indicate that individuals in the valley were more likely to ascribe success to factors exogenous to the single individual (e.g. luck) instead of behavior (see Table 20).

5 Results

Does Western television shape individual beliefs on the drivers of success?

Table 5 presents the results of the analysis on individual beliefs on the drivers of success based on data from the late 1980s. The empirical findings indicate that access to Western television increases the probability to believe that effort pays off by approximately 7 percentage points. By offering the GDR citizens a “window to the Western world” with its values and attitudes through both political reporting and entertainment, Western television has made them share beliefs more common in the West.

Apart from Western television exposure, several socioeconomic characteristics have a significant impact on individual beliefs. The probability to stress the importance of effort relative to factors like luck for success is, other things equal, lower for male, married, better educated, and poorer individuals. The fact that highly-educated individuals are less inclined to believe that effort pays off for themselves might be a consequence of the communist system itself: Income inequality had been low in the GDR, implying that a person with an

¹⁷Further information about the variable description is offered in the appendix (Table 22).

Table 5: DETERMINANTS OF BELIEFS - IMMEDIATE EFFECT OF TELEVISION

	Effort pays off		
	(1)	(2)	(3)
Dresden	-0.0666*** (0.0221)	-0.0645*** (0.0212)	-0.0682*** (0.0201)
Age	-0.0264** (0.0104)	-0.0103 (0.0172)	-0.0108 (0.0182)
Age squared	0.0004** (0.0002)	0.0002 (0.0003)	0.0002 (0.0003)
Female	0.1014*** (0.0342)	0.1222*** (0.0363)	0.1285*** (0.0357)
Married		-0.0503* (0.0261)	-0.0428* (0.0252)
Widowed/ Divorced		-0.0475 (0.0415)	-0.0371 (0.0432)
Children		0.0309 (0.0360)	0.0306 (0.0360)
University		-0.1534*** (0.0450)	-0.1585*** (0.0456)
Intermed. education		-0.0735* (0.0427)	-0.0709* (0.0398)
High education		-0.0423 (0.0394)	-0.0322 (0.0403)
Net income		0.0088** (0.0039)	0.0111*** (0.0033)
Population density			-0.0001 (0.0001)
Industrial employment			-0.0059 (0.0078)
Agricultural employment			-0.0049 (0.0133)
Observations	3317	2517	2517
Pseudo- R^2	0.0130	0.0190	0.0224

Notes: Probit regressions (marginal effects are shown). Omitted categories are male, never married, and finished 8th grade (or less) in school. Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level.

university degree had no substantially higher income than a low educated worker. Thus, the beliefs of highly-educated individuals may simply reflect their personal experience.

Before reunification, East Germans were more likely to share beliefs more common in the West than in socialism if they had been able to watch Western television. But does this effect persist after Western television has been available in all parts of the GDR or, even more important, East Germans have learned about life in the FRG by own experience? To answer this question, I use longitudinal data from the GSOEP on individual beliefs collected between 1994 and 1999. The results of the empirical analysis on the determinants of the

individual belief that success in life is mainly a matter of luck are presented in Table 6.

The findings suggest a lasting impact of exposure to FRG television in the GDR on East Germans' beliefs. Individuals with access to Western television are less likely to believe that luck determines possibilities in life than individuals from parts of the GDR without Western television, although I control for the current economic factors (e.g. net household income, occupation, and employment status) and regional unemployment. The impact of television on individual beliefs is also sizeable as the marginal effect of the Dresden-dummy ranges from 4 to 5 percentage points. Thus, the effect of FRG television reception is roughly 1.5 times the impact of being currently unemployed.

Table 6: DETERMINANTS OF BELIEFS - PERSISTENCE OF THE TELEVISION EFFECT

	Luck matters for success			
	(1)	(2)	(3)	(4)
Dresden	0.0406*** (0.0137)	0.0442*** (0.0114)	0.0492*** (0.0125)	0.0506*** (0.0122)
Age	-0.0303*** (0.0038)	-0.0150*** (0.0049)	-0.0146*** (0.0050)	-0.0147*** (0.0051)
Age squared	0.0006*** (0.0001)	0.0003*** (0.0001)	0.0003*** (0.0001)	0.0003*** (0.0001)
Age cubed	-0.0000*** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)
Female	0.0481*** (0.0088)	0.0360*** (0.0105)	0.0359*** (0.0106)	0.0358*** (0.0102)
Father's education	-0.0494*** (0.0088)	-0.01908** (0.0082)	-0.0190** (0.0086)	-0.0175** (0.0076)
Married		0.0279** (0.0132)	0.0267* (0.0141)	0.0233 (0.0148)
Married, but separated		0.0730* (0.0401)	0.0723* (0.0407)	0.0695* (0.0394)
Divorced or widowed		0.0376 (0.0270)	0.0377 (0.0274)	0.0355 (0.0280)
Self employed		0.0031 (0.0196)	0.0038 (0.0197)	0.0019 (0.0198)
Civil servant		0.0560 (0.0400)	0.0561 (0.0409)	0.0629* (0.0381)
White collar		-0.0211*** (0.0075)	-0.0212*** (0.0074)	-0.0230*** (0.0071)
Pensioner		0.0212 (0.0171)	0.0212 (0.0171)	0.0221 (0.0177)
Not employed		0.0142 (0.0199)	0.0147 (0.0199)	0.0126 (0.0197)
Unemployed		0.0328** (0.0143)	0.0322** (0.0144)	0.0323** (0.0146)
Unemployment experience		0.0048 (0.0031)	0.0048 (0.0031)	0.0046 (0.0033)
University degree		-0.0809*** (0.0178)	-0.0804*** (0.0175)	-0.0765*** (0.0163)
High education		-0.0901*** (0.0259)	-0.0899*** (0.0263)	-0.0854*** (0.0265)
Intermed. education		-0.0375** (0.0157)	-0.0373** (0.0156)	-0.0366** (0.0161)
No. persons in household		0.0275*** (0.0093)	0.0268*** (0.0097)	0.0235*** (0.0082)
No. children in household		-0.0302*** (0.0089)	-0.0295*** (0.0095)	-0.0273*** (0.0087)
Log. household income		-0.0886*** (0.0164)	-0.0876*** (0.0168)	-0.0834*** (0.0179)
Unemployment rate (state)			0.0088 (0.0074)	0.0133*** (0.0038)
Year 1994	-0.0721*** (0.0118)	-0.0797*** (0.0133)	-0.0564*** (0.0195)	-0.0440*** (0.0127)
Year 1995	-0.0792*** (0.0090)	-0.0876*** (0.0091)	-0.0550** (0.0254)	-0.0374*** (0.0141)
Year 1996	-0.0927*** (0.0116)	-0.0992*** (0.0121)	-0.0822*** (0.0153)	-0.0728*** (0.0115)
West Germany		-0.0015 (0.0271)	0.0632 (0.0568)	0.1542** (0.0627)
State FE	NO	NO	NO	YES
Observations	11970	11689	11689	11689
Pseudo-R ²	0.0337	0.0642	0.0649	0.0704

Notes: Probit regressions (marginal effects are shown). Omitted categories are male, never married, being still in education, and less than 9 years of schooling. Robust standard errors in parentheses, clustered at Nuts2-level. ***/**/* denotes significance at the 1%/5%/10% level.

Several further explanatory variables have been found to affect individual beliefs. The respondent's age has a significant but non-linear impact. The probability to believe that luck is a major determinant of success is higher for female, married, unemployed respondents, and blue collar workers. Furthermore, the perceived relative importance of luck decreases with both the individual own and the father's level of education, the household income, the number of children living in the same household, and increases with the household size. Finally, living in states with high unemployment as well as living in West Germany increases the perceived importance of luck (at least if other state characteristics are controlled for by including current state of residence fixed effects).

How does Western television affect East German attitudes towards the GDR?

Western television has affected East Germans' beliefs by making them more inclined to stress the importance of factors like effort instead of luck as drivers of success in life. Although the aim of this analysis is to identify the impact of television on individual beliefs, it is useful to analyze how the information provided by Western broadcasts affected attitudes towards the GDR and socialism as a major objective of East German television had been the indoctrination of the citizens. Thus, Table 7 includes information on the individual assessment of the reporting by GDR media, the confidence in the future development of socialist economies as well as the democracy in the GDR, the agreement to the Marxist-Leninist world view, and the subjective standard of living in the GDR.

The results shown in the first three columns of Table 7 suggest that individuals from the Dresden-district are significantly less content with the quality of reporting by state-controlled GDR media. Although they are less experienced with competing media sources, persons living in the valley are around 13 to 16 percentage points more likely to be skeptical towards GDR media. Obviously, the lack of competing information and views on world politics has been translated into a more critical assessment of information provided by GDR media. It seems like those living in the valley are not only aware of the media bias but also seem to - compared to their fellow citizens who watched FRG television - overestimate the bias resulting from the principle objective of GDR media, the indoctrination of their citizens.

Furthermore, respondents living in the valley are significantly less optimistic about the future development of the economy in socialist states and the socialist democracy in the GDR. Access to Western television has increased the likelihood of being confident in the further development of the socialist economies as well as in the evolution of the GDR democracy by roughly 7 to 9 percentage points. Although FRG television had provided more information on severe economic problems or the lack of democracy in the GDR, its audience is more

optimistic concerning the future prospects of their country. It is, however, possible that individuals in the valley were also aware of these problems but obtained these information through other sources.

Table 7 also reveals a highly significant negative relationship between the exclusion from Western television and the agreement with the Marxist-Leninist ideology with marginal effects ranging from 4.7 to 7 percentage points. Surprisingly, the information provided by Western media seems to raise the individual confirmation to the predominant ideology of the GDR despite its more critical reporting on socialism. Nevertheless, it is not clear to what extent this effect mirrors different policy preferences or simply reflects a lower degree of satisfaction with the GDR-regime within the valley of the clueless.

Individuals living in the valley tend to be less satisfied with the life in the GDR. Several months before the fall of the Berlin wall, Western television increased the probability to be satisfied by 5 to 7 percentage points.

Table 7: ATTITUDES TOWARDS THE GDR AND SOCIALISM - IMMEDIATE EFFECT OF TELEVISION

	GDR media			Life GDR			Socialist economies			Socialist democracy			Marx-Lenin		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Dresden	-0.1287***	-0.1355***	-0.1571***	-0.0673***	-0.0557***	-0.0530***	-0.0918***	-0.0719***	-0.0852***	-0.0727***	-0.0655**	-0.0847***	-0.0668***	-0.0474***	-0.0703***
	(0.0196)	(0.0245)	(0.0193)	(0.0082)	(0.0081)	(0.0066)	(0.0282)	(0.0236)	(0.0204)	(0.0254)	(0.0260)	(0.0245)	(0.0150)	(0.0167)	(0.0106)
Age	-0.0211	-0.0019	-0.0023	0.0014	-0.0063	-0.0055	-0.0408***	-0.0460***	-0.0470***	-0.0225**	-0.0154	-0.0173	0.0331***	0.0391***	0.0392***
	(0.0131)	(0.0102)	(0.0115)	(0.0047)	(0.0083)	(0.0083)	(0.0055)	(0.0076)	(0.0064)	(0.0090)	(0.0145)	(0.0145)	(0.0095)	(0.0120)	(0.0125)
Age squared	0.0004	0.0001	0.0001	0.00004	0.0002	0.0002	0.0006***	0.0007***	0.0007***	0.0004***	0.0003	0.0003	-0.0004***	-0.0005**	-0.0005**
	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0005)	(0.0002)	(0.0002)
Female	0.1192***	0.1541***	0.1538***	0.0404***	0.0335***	0.0379***	0.0859***	0.0684***	0.0749***	0.0656***	0.0617***	0.0662***	0.1213***	0.1336***	0.1336***
	(0.0249)	(0.0339)	(0.0314)	(0.0095)	(0.0125)	(0.0136)	(0.0201)	(0.0210)	(0.0194)	(0.0196)	(0.0237)	(0.0224)	(0.0331)	(0.0314)	(0.0316)
Married		-0.0671***	-0.0650***		-0.0212	-0.0142		-0.0122	-0.0035		-0.0204	-0.0162		0.0104	0.0140
		(0.01939)	(0.0173)		(0.0326)	(0.0297)		(0.0222)	(0.0186)		(0.0263)	(0.0211)		(0.0301)	(0.0283)
Widowed/ Divorced		0.0059	0.0155		-0.0305	-0.0246		-0.0384	-0.0239		0.0058	0.0164		0.0155	0.0247*
		(0.0258)	(0.0273)		(0.0410)	(0.0396)		(0.0589)	(0.0581)		(0.0693)	(0.0703)		(0.0157)	(0.0139)
Children		0.0405	0.0422		0.0228	0.0216		0.0509	0.0510		0.0633**	0.0646**		-0.0285	-0.0277
		(0.0319)	(0.0321)		(0.0224)	(0.0213)		(0.0413)	(0.0410)		(0.0262)	(0.0265)		(0.0346)	(0.0343)
University		-0.1884***	-0.1933***		0.0149	0.0122		-0.0426*	-0.0484**		-0.0878*	-0.0944*		-0.0525**	-0.0566**
		(0.0348)	(0.0319)		(0.0361)	(0.0363)		(0.0235)	(0.0247)		(0.0529)	(0.0503)		(0.0254)	(0.0282)
Net income		0.0109	0.0128		-0.0014	-0.0003		0.0009	0.0039		0.0050	0.0077*		0.0048	0.0065
		(0.0105)	(0.0105)		(0.0033)	(0.0032)		(0.0053)	(0.0052)		(0.0063)	(0.0043)		(0.0078)	(0.0071)
Intermed. education		-0.0846***	-0.0836***		0.0520***	0.0565***		-0.0426	-0.0398		-0.0549	-0.0568		0.0716*	0.0727*
		(0.0296)	(0.0323)		(0.0161)	(0.0139)		(0.0277)	(0.0313)		(0.0401)	(0.0384)		(0.0402)	(0.0406)
High education		-0.0854*	-0.0776		0.0657	0.0706**		-0.0973***	-0.0851***		-0.0493	-0.0410		0.2430***	0.2504***
		(0.0514)	(0.0515)		(0.0467)	(0.0442)		(0.0203)	(0.0206)		(0.0429)	(0.0415)		(0.0443)	(0.0420)
Population density			-0.0002**			-0.0001*			-0.0002*			-0.0001			-0.0002***
			(0.0001)			(0.0000)			(0.0001)			(0.0001)			(0.0001)
Industrial employment			-0.0139*			-0.0063**			-0.0116			-0.0070			-0.0175***
			(0.0074)			(0.0028)			(0.0083)			(0.0100)			(0.0001)
Agricultural employment			-0.0222*			-0.0053			-0.0143			-0.0103			-0.0270***
			(0.0134)			(0.0051)			(0.0159)			(0.0192)			(0.0072)
Observations	3393	2571	2571	3456	2603	2603	3461	2607	2607	3458	2603	2603	3450	2598	2598
Pseudo- R^2	0.0217	0.0401	0.0437	0.0358	0.0384	0.0488	0.0215	0.0217	0.0279	0.0071	0.0091	0.0138	0.0418	0.0620	0.0665

Notes: Probit regressions (marginal effects are shown). Omitted categories are male, never married, and finished 8th grade (or less) in school. Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level.

Table 8: ATTITUDES TOWARDS THE GDR - PERSISTENCE OF THE TELEVISION EFFECT

	SOCIAL SECURITY GDR (1990)		DEMOCRACY GDR (1990)		LIFE STANDARD GDR (1991-93)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dresden	0.004 (0.0173)	0.0247 (0.0248)	-0.0152 (0.0219)	-0.0114 (0.0397)	0.0248** (0.0116)	0.0239** (0.0112)	0.0289*** (0.0112)
Age	-0.0188** (0.0079)	-0.0106 (0.0139)	-0.0207** (0.0102)	-0.024 (0.0182)	-0.0124*** (0.0040)	-0.0038 (0.0044)	-0.0037 (0.0044)
Age squared	0.0003* (0.0002)	0.0001 (0.0003)	0.0004* (0.0002)	0.0005 (0.0004)	0.0002** (0.0001)	0 (0.0001)	0 (0.0001)
Age cubed	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)
Female	0.0162 (0.0136)	0.0168 (0.0144)	0.0011 (0.0076)	-0.0115 (0.0112)	-0.0064* (0.0033)	-0.0044 (0.0045)	-0.0044 (0.0045)
Farther's education	-0.0273 (0.0235)	-0.0066 (0.0203)	-0.0147 (0.0275)	-0.02 (0.0230)	-0.0188*** (0.0052)	-0.0128** (0.0059)	-0.0122** (0.0058)
Married		0.0366 (0.0322)		0.0104 (0.0387)		-0.0172 (0.0130)	-0.017 (0.0129)
Married, but separated		0.1315 (0.1734)		0.0561 (0.1092)		-0.0442 (0.0271)	-0.0449 (0.0275)
Divorced or widowed		-0.0089 (0.0448)		-0.0195 (0.0496)		-0.0087 (0.0155)	-0.0088 (0.0154)
Not employed		-0.0504 (0.0422)		0.0408 (0.0379)		0.0072 (0.0182)	0.0083 (0.0182)
Pensioner		0.0811** (0.0361)		0.1064*** (0.0373)		0.0045 (0.0138)	0.004 (0.0135)
Unemployed						-0.0109 (0.0075)	-0.0115 (0.0075)
Civil servant						-0.0197 (0.0315)	-0.0208 (0.0317)
Self employed		0.0716 (0.0547)		0.0023 (0.0503)		0.0279** (0.0145)	0.0270* (0.0144)
White collar		-0.0064 (0.0143)		0.0189 (0.0273)		-0.0083 (0.0097)	-0.0081 (0.0097)
University degree		-0.0600** (0.0262)		0.013 (0.0362)		0.0082 (0.0116)	0.0083 (0.0116)
High education		-0.0531 (0.0525)		0.0114 (0.0627)		-0.0356** (0.0161)	-0.0345** (0.0161)
Intermed. education		0.0029 (0.0447)		0.0361 (0.0393)		-0.0097 (0.0123)	-0.0095 (0.0122)
No. persons in household		-0.0067 (0.0172)		-0.0114 (0.0143)		0.0054 (0.0044)	0.0043 (0.0046)
No. kids in household		0.0115 (0.0240)		0.0246 (0.0169)		-0.0068 (0.0075)	-0.0065 (0.0076)
Low household income		0.0307 (0.0455)		0.0137 (0.0346)		0.0093 (0.0135)	0.0091 (0.0133)
Intermed. household income		0.0071 (0.0284)		0.0057 (0.0374)		-0.0004 (0.0161)	-0.0005 (0.0160)
Unemployment experience						-0.0061 (0.0056)	-0.0061 (0.0057)
Unemployment rate (state)		0.0251* (0.0146)		0.0048 (0.0245)			0.0045 (0.0035)
Year 1991						0.001 (0.0122)	0.0257 (0.0238)
Year 1992						-0.0331** (0.0144)	-0.0285* (0.0147)
Observations	3277	3107	3275	3104		9272	9272
Pseudo- R^2	0.0039	0.0136	0.0063	0.0103		0.0175	0.0183

Notes: Probit regressions (marginal effects are shown). Omitted categories are male, never married, being still in education, being born before 1931, less than 9 years of schooling, and an available household income above the 75th percentile in 1992. The unemployment rate is measured as the average unemployment rate in the state of residence between 1991 and 1995 in the analysis of social security and democracy in the GDR. Robust standard errors in parentheses, clustered at the level of the regional planning units or in case of the life standard in the GDR at Nuts2-level. ***/**/* denotes significance at the 1%/5%/10% level.

The empirical finding that East Germans with access to FRG television have more positive attitudes toward the GDR and socialism is interesting but not necessarily inconsistent. West-

ern television had been an important source of entertainment in the otherwise dull everyday life in East Germany. Every evening, GDR citizens collectively emigrated when switching on television to watch Western shows, movies, and soap operas. Kern and Hainmueller (2009) conclude in their study on the impact of Western television that it even increased regime support as its entertainment had functioned as “opium for the masses”. If this is the case, Western television has simply made life in the GDR more bearable and, thus, increased general satisfaction of people watching the broadcasts and made them less critical toward the GDR regime and the realities of socialism.

If the main contribution of Western television had been the entertainment of East Germans to make them more content with their situation, it is not clear why the effect of different access to these broadcasts should persist once everyone has the opportunity to watch or the situation has changed anyway. The results shown in Table 8 confirm a high context-dependency of the FRG television effect on these attitudes: The negative impact of television exposure on individual attitudes towards the GDR disappears soon after the inner-German border was opened, individuals from the Dresden-district are even more satisfied with the living standard in East Germany after reunification.

6 Robustness

The empirical findings suggest that access to Western television has made East Germans more inclined to share beliefs that were more common in West Germany than in the former GDR and that this effect persists for several years after the reunification. In addition, Western television increased the support for the GDR-regime as individuals who were able to watch FRG broadcasts had been more content with the GDR and socialism. This differential assessment, however, diminished soon after the borders were opened.

In this section, several alternative explanations for these results will be discussed and tested empirically. It might be possible that individuals living in the district of Dresden have been less content with the GDR and socialism due to other reasons. Therefore, I check the robustness of the results by using different control groups and include variables which account for alternative factors which may explain differential attitudes between those living in the “valley of the clueless” and those from other parts of the GDR. Furthermore, the robustness of the results is tested by using different regions as a control group for individuals from the Dresden-district. Finally, I add individuals from the region around Greifswald-Stralsund to the treatment group as they had also only partial access to Western television before the reunification.

Different control groups

Although Dresden seems to be on average comparable to other districts of the GDR (comp. Tables 2 and 3), a major concern might be that factors others than television reception cause the differential beliefs and attitudes of the population. To overcome this concern, I will test the robustness of the results by using different regions in the GDR as control group. The baseline results are based on a comparison of individuals living in the Dresden-district to people in other parts of the GDR. To further restrict the control group, first, observations from Berlin will be excluded from the sample since this district is not fully comparable to other districts due to its position as the capital of the GDR and the fact that the former city of Berlin had been separated by allied forces. In the analysis based on GDR data, I will further drop 60 observations from Cottbus in order to confirm that the results are not driven by a selective sample in this district. Finally, the control group will be restricted to the remaining Saxon districts (Leipzig and Karl-Marx-Stadt). The Saxon districts share a common history as parts of the Kingdom of Saxony and, thus, most likely also a common culture and values. Furthermore, they are also highly comparable with respect to other characteristics (see Table 3) and the peaceful revolution in autumn 1989 started with demonstrations in Leipzig (indicating that the citizens from this districts had not been very satisfied with the regime, too).

For the analysis on the persistence of the FRG television exposure also data for the outermost northeast of the GDR which had only partial access to these broadcasts is available. Thus, I will both exclude individuals living in the regional planning unit “Greifswald-Stralsund” from the control group and add them to the treatment group.

Table 9 presents the results of the analysis on individual beliefs and attitudes towards the GDR in 1988/89 obtained by using the different control groups. The coefficient of the Dresden-dummy remains highly significant and robust. Except for the analysis on the subjective satisfaction with life in the GDR, the marginal effects increase if a more restrictive control group is used. Table 10 offers the results for the analysis of the persistence of individual beliefs. The television effect is robust to several variations of the control group (i.e., the exclusion of individuals living in Greifswald-Stralsund, Berlin, and the restriction to those living in other parts of Saxony).

If the treatment group is extended to both parts of the “valley of the clueless” (i.e., Dresden and the regional planning unit Greifswald-Stralsund) Western television still has a positive - though not significant - impact on the individual belief that luck is an important source of success. This does not necessarily imply that Western television has no effect or that the previous result are driven by an unobserved factor related to the Dresden-district. Rather it is more likely that individuals in the outermost northeast of the GDR had partial access

to Western television as the area excluded from the reception of this broadcasts had not coincided perfectly with this region (as it had been the case in the district of Dresden). Data from a survey conducted by the central institute for youth research in 1981 include a question on the frequency of watching FRG television for political information.¹⁸ The data reveals that already at the beginning of the 1980s only 14 percent of the respondents in districts with access to Western television never watched it. In contrast to that, 68.8 percent of the respondents living in the district of Dresden stated that they do not watch Western television at all. Among those from the northeastern region of the GDR (the districts Rostock and Neubrandenburg), only 27 percent stated not to watch FRG broadcasts. Thus, the smaller treatment effect may be due to downward biased estimates as I have might assigned individuals to the treatment group who actually had access to Western television. Furthermore, Dresden and Greifswald-Stralsund might be considerably different with respect to several characteristics as the latter is very rural. This heterogeneity perhaps also contributed to the loss of significance as the television effect is significant at the 5% -level if state fixed effects controlling for this heterogeneity are included.

Table 9: DIFFERENT CONTROL GROUPS (1988/89)

	Effort pays off			Marx-Lenin			Life GDR		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Dresden	-0.0666***	-0.0645***	-0.0682***	-0.0668***	-0.0474***	-0.0703***	-0.0673***	-0.0557***	-0.0530***
Observations	(0.0221)	(0.0212)	(0.0201)	(0.0150)	(0.0167)	(0.0106)	(0.0081)	(0.0081)	(0.0066)
Pseudo- R^2	3317	2517	2517	3450	2598	2598	3456	2603	2603
excl. Berlin	-0.0783***	-0.0759***	-0.0753***	-0.0687***	-0.0564***	-0.0694***	-0.0690***	-0.0569***	-0.0513***
Observations	(0.0233)	(0.0215)	(0.0181)	(0.0179)	(0.0171)	(0.0097)	(0.0099)	(0.0093)	(0.0047)
Pseudo- R^2	2933	2258	2258	3039	2321	2321	3045	2326	2326
& Cottbus	-0.0780***	-0.0756***	-0.0756***	-0.0695***	-0.0554***	-0.0700***	-0.0700***	-0.0567***	-0.0516***
Observations	(0.0242)	(0.0219)	(0.0192)	(0.0185)	(0.0175)	(0.0108)	(0.0099)	(0.0095)	(0.0052)
Pseudo- R^2	2878	2248	2248	2980	2311	2311	2986	2316	2316
Saxony	-0.0808***	-0.0814***	-0.0693***	-0.0532**	-0.0532**	-0.0581***	-0.0379***	-0.0379***	-0.0379***
Observations	(0.0080)	(0.0119)	(0.0171)	(0.0198)	(0.0198)	(0.0161)	(0.0105)	(0.0105)	(0.0105)
Pseudo- R^2	1566	1218	1639	1261	1643	1643	1264	1264	1264
	0.0167	0.0232	0.0422	0.0504	0.0313	0.0313	0.0416	0.0416	0.0416

	GDR media			Socialist economies			Socialist democracy		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Dresden	-0.1287***	-0.1355***	-0.1571***	-0.0918***	-0.0719***	-0.0852***	-0.0727***	-0.0655**	-0.0847***
Observations	(0.0196)	(0.0245)	(0.0193)	(0.0282)	(0.0236)	(0.0204)	(0.0254)	(0.0260)	(0.0245)
Pseudo- R^2	3393	2571	2571	3461	2607	2607	3458	2603	2603
excl. Berlin	-0.1365***	-0.1470***	-0.1639***	-0.1151***	-0.0886***	-0.0948***	-0.0898***	-0.0838***	-0.0970***
Observations	(0.0216)	(0.0264)	(0.0116)	(0.0216)	(0.0223)	(0.0034)	(0.0240)	(0.0237)	(0.0047)
Pseudo- R^2	2993	2301	2301	3051	2332	2332	3046	2326	2326
& Cottbus	-0.1382***	-0.1469***	-0.1641***	-0.1165***	-0.0883***	-0.0951***	-0.0913***	-0.0844***	-0.0970***
Observations	(0.0223)	(0.0267)	(0.0125)	(0.0225)	(0.0227)	(0.0031)	(0.0248)	(0.0242)	(0.0047)
Pseudo- R^2	2934	2291	2291	2992	2322	2322	2987	2316	2316
Saxony	-0.1388***	-0.1664***	0.0501	0.0277	0.0242	0.0298	0.0082	0.0108	0.0158
Observations	(0.0192)	(0.0119)	(0.0157)	(0.0231)	(0.0231)	(0.0028)	(0.0028)	(0.0090)	(0.0090)
Pseudo- R^2	1606	1246	1643	1264	1641	1641	1264	1264	1264
	0.0367	0.0697	0.0256	0.031	0.017	0.017	0.0293	0.0293	0.0293

Notes: Probit regressions (marginal effects are shown). Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level. For further information see also Table 5 and 7. In case of the restriction of the control group to Saxon district-level controls are not included due to collinearity (thus, specification (3) cannot be estimated).

¹⁸This survey had been conducted to get insights in the readiness of the respondents to defend their country.

Table 10: DIFFERENT CONTROL GROUPS - SOEP

	Luck				Social Security GDR		Democracy GDR		Life Standard GDR		
	(1)	(2)	(3)	(4)	(1)	(2)	(1)	(2)	(1)	(2)	(3)
Dresden	0.0406***	0.0442***	0.0492***	0.0506***	0.004	0.0247	-0.0152	-0.0114	0.0248**	0.0239**	0.0289***
	(0.0137)	(0.0114)	(0.0125)	(0.0122)	(0.0173)	(0.0248)	(0.0219)	(0.0397)	(0.0116)	(0.0112)	(0.0112)
Observations	11970	11689	11689	11689	3277	3107	3275	3104	9568	9272	9272
Pseudo- R^2	0.0337	0.0642	0.0649	0.0704	0.0039	0.0136	0.0063	0.0103	0.0163	0.0175	0.0183
excl.	0.0393***	0.0429***	0.0481***	0.0513***	0.0022	0.0253	-0.0218	-0.0067	0.0240**	0.0233**	0.0294***
	(0.0136)	(0.0110)	(0.0121)	(0.0124)	(0.0178)	(0.0243)	(0.0217)	(0.0371)	(0.0117)	(0.0113)	(0.0113)
Observations	11678	11404	11404	11404	3193	3031	3191	3028	9340	9057	9057
Pseudo- R^2	0.0342	0.0656	0.0664	0.0716	0.0045	0.0141	0.0076	0.0119	0.0168	0.0181	0.0192
excl. Berlin & Greifswald	0.0347***	0.0419***	0.0469***	0.0536***	-0.0102	-0.0001	-0.0323**	-0.0407	0.0222*	0.0221*	0.0293**
	(0.0134)	(0.0117)	(0.0133)	(0.0125)	(0.0105)	(0.0187)	(0.0164)	(0.0280)	(0.0118)	(0.0115)	(0.0120)
Observations	10864	10623	10623	10623	2980	2828	2978	2825	8714	8450	8450
Pseudo- R^2	0.0353	0.0663	0.0667	0.0721	0.004	0.011	0.0079	0.0125	0.0161	0.0176	0.0186
Saxony	0.0452***	0.0509***	0.0505***	0.0500***	-0.0023	-0.0116	-0.0574**	-0.0707***	0.0401***	0.0364***	0.0373***
	(0.0170)	(0.0132)	(0.0127)	(0.0126)	(0.0164)	(0.0237)	(0.0265)	(0.0272)	(0.0130)	(0.0130)	(0.0131)
Observations	3689	3617	3617	3607	993	946	993	946	2892	2794	2794
Pseudo- R^2	0.0424	0.0747	0.079	0.0826	0.0067	0.0197	0.0106	0.023	0.0309	0.0344	0.0354
Valley	0.015	0.0223	0.0239	0.0420**	-0.0281*	-0.0183	-0.0834*	-0.1014***	0.0115	0.0112	0.0133
excl. Berlin	(0.0231)	(0.0223)	(0.0243)	(0.0185)	(0.0163)	(0.0162)	(0.0448)	(0.0371)	(0.0152)	(0.0152)	(0.0171)
Observations	10388	10163	10163	10163	2892	2739	2890	2736	8444	8183	8183
Pseudo- R^2	0.0357	0.0641	0.0642	0.0701	0.0041	0.0113	0.0096	0.0167	0.0129	0.015	0.0153

Notes: Probit regressions (marginal effects are shown). Robust standard errors in parentheses, clustered at NUTS2-level (life standard GDR) or at the level of regional planning units (otherwise). ***/**/* denotes significance at the 1%/5%/10% level. For further information see also Table 6 and 8.

Potential alternative explanations related to structural differences between Dresden and other GDR districts

If individuals living in the district of Dresden differed considerably from those living in other regions of the GDR, this - rather than differential access to Western television - may explain the findings of this paper. To test whether Western television reception is driving the observable differences in individual beliefs and attitudes towards the GDR, I will extent my baseline specification by controlling for several district level characteristics (see Table 3).

The GDR had been a planned economy with a considerable amount of regional specialization on certain sectors and industries which might have resulted in different population composition (e.g. industrial vs. agricultural workers). Thus, the Tables 11 to 16 present the results for additional robustness checks for the main results using the GDR survey data in 1988/89.

In column 2 of each Table, I control for the relevance of industrial production in each district (measured as the share of gross industrial production of total GDR industrial production), column 3 includes the working age population as a percentage of total district population, and the level of education proxied by the share of workers with an university degree is captured in column 4. The educational attainment among the working age population has a significant impact on all beliefs and attitudes analyzed in this paper: Individuals living in districts with better educated workers are less likely to believe that effort pays off, to agree with the socialist ideology, to be confident with the future economic and democratic development as well as with the reporting by GDR media. Living in a district with a higher share of the population in their working age has the same effect on beliefs and attitudes (except for the agreement with the Marxist-Leninist worldview). The share of industrial production has no significant impact on these attitudes, but individuals from highly industrialized districts are less content with life in the GDR, perhaps due to a high level of environmental pollution.

Furthermore, the location of a district might have an impact on the attitudes of the inhabitants. Thus, I control both for the fact that a district has a common border with the FRG and the distance between the district capital and Berlin (in kilometers). While the distance to Berlin fails to have any significant impact, living in a border district reduces the probability to agree with the socialist ideology, to be confident in the future development of the socialist economy and democracy, and the satisfaction with the reporting by GDR media.

The specifications shown in column 6 further control for state spending in infrastructure and public goods proxied by the number of hospital beds per 10,000 inhabitants. As the regime probably invested less in the district of Dresden, this might also explain the more crit-

ical attitudes of individuals living in this district. This variable has, however, no significant impact on any of the dependent variables.

Finally, Dresden had been famous for its arts and culture. Thus, it might be the case that the inhabitants are still more interested in culture, arts, and literature. More generally, if (traditionally educated) middle-class intellectuals were predisposed to negative aspects of the totalitarian regime and predominantly located in Dresden, this might also explain a general dissatisfaction with the GDR. To capture this, I will include both dummy-variables indicating whether the respondent had lately been to a cinema, museum, art exhibition, or theater (columns 8 to 11) and the number of theater visitors in each district (weighted by the total district population). The individual interest in arts and culture affects individual attitudes and beliefs at least partially: Individuals who visited art exhibitions and museums are more likely to believe that effort pays off. Furthermore, having visited at least one art exhibition within the last three months is related with a higher confidence in the development of the democracy in the GDR, while cinema visits seem to reduce the satisfaction with life in East Germany. The share of theater visitors proves to be a significant impact factor for individual beliefs and general attitudes: Individuals in districts with a higher share of the population visiting theaters are less inclined to believe that effort pays off, to agree with the dominant ideology, to be confident with the development of the socialist economies and the GDR democracy, the reporting by GDR media.

An overall important finding is that the inclusion of these further control variables does not change the results in substance, and that the treatment indicator remains robust and significant.

Table 11: BELIEFS (1988/89) - ADDITIONAL CONTROL VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dresden	-0.0645*** (0.0212)	-0.0662*** (0.0171)	-0.1035*** (0.0181)	-0.0630*** (0.0176)	-0.0742*** (0.0066)	-0.0828*** (0.0193)	-0.0427*** (0.0135)	-0.0653*** (0.0202)	-0.0777*** (0.0253)	-0.0728*** (0.0245)	-0.0705*** (0.0226)
Age	-0.0103 (0.0172)	-0.0104 (0.0176)	-0.0121 (0.0178)	-0.0122 (0.0177)	-0.0108 (0.0185)	-0.0111 (0.0175)	-0.0115 (0.0179)	-0.0117 (0.0191)	0.0091 (0.0223)	0.0112 (0.0235)	0.0128 (0.0240)
Age squared	0.0002 (0.0003)	0.0002 (0.0003)	0.0002 (0.0003)	0.0002 (0.0003)	0.0002 (0.0003)	0.0002 (0.0003)	0.0002 (0.0003)	0.0002 (0.0003)	-0.0002 (0.0004)	-0.0003 (0.0004)	-0.0003 (0.0004)
Female	0.1222*** (0.0363)	0.1219*** (0.0364)	0.1218*** (0.0372)	0.1250*** (0.0371)	0.1224*** (0.0361)	0.1254*** (0.0374)	0.1252*** (0.0365)	0.1279*** (0.0350)	0.1602*** (0.0526)	0.1581*** (0.0522)	0.1612*** (0.0488)
Married	-0.0503* (0.0261)	-0.0507** (0.0249)	-0.0536** (0.0249)	-0.0497** (0.0246)	-0.0509* (0.0264)	-0.0506** (0.0238)	-0.0505** (0.0253)	-0.0446* (0.0251)	-0.0472 (0.0635)	-0.0600 (0.0664)	-0.0596 (0.0645)
Widowed/ Divorced/ Children	-0.0475 (0.0415) 0.0309 (0.0360)	-0.0478 (0.0422) 0.0310 (0.0365)	-0.0473 (0.0425) 0.0325 (0.0366)	-0.0437 (0.0428) 0.0316 (0.0363)	-0.0469 (0.0415) 0.0308 (0.0360)	-0.0487 (0.0421) 0.0313 (0.0358)	-0.0421 (0.0432) 0.0331 (0.0362)	-0.0343 (0.0440) 0.0292 (0.0364)	-0.0224 (0.1002) 0.0614 (0.0405)	-0.0299 (0.1077) 0.0729* (0.0397)	-0.0394 (0.1113) 0.0659 (0.0402)
University	-0.1534*** (0.0450)	-0.1534*** (0.0453)	-0.1549*** (0.0467)	-0.1567*** (0.0466)	-0.1548*** (0.0460)	-0.1526*** (0.0452)	-0.1577*** (0.0471)	-0.1585*** (0.0455)	-0.0844 (0.0736)	-0.0760 (0.0726)	-0.0736 (0.0733)
Intermed. education	-0.0735* (0.0427)	-0.0739* (0.0410)	-0.0788* (0.0405)	-0.0780* (0.0402)	-0.0754* (0.0402)	0.0758* (0.0395)	-0.0779* (0.0403)	-0.0718* (0.0389)	-0.0764 (0.0865)	-0.0686 (0.0884)	-0.0639 (0.0902)
High education	-0.0423 (0.0394)	-0.0427 (0.0384)	-0.0447 (0.0417)	-0.0410 (0.0418)	-0.0420 (0.0400)	-0.0450 (0.0397)	-0.0408 (0.0422)	-0.0322 (0.0391)	-0.0572 (0.0973)	-0.0522 (0.0975)	-0.0476 (0.0988)
Net income	0.0088** (0.0039)	0.0088** (0.0039)	0.0099*** (0.0036)	0.0106*** (0.0034)	0.0091** (0.0037)	0.0095*** (0.0035)	0.0117*** (0.0032)	0.0107*** (0.0034)	0.0083 (0.0064)	0.0055 (0.0062)	0.0052 (0.0059)
Population density									0.00001 (0.00010)	0.00003 (0.0095)	0.00005 (0.0001)
Industrial employment									0.0032 (0.0095)	0.0041 (0.0095)	0.0060 (0.0096)
Agricultural employment									0.0123 (0.0177)	0.0143 (0.0177)	0.0173 (0.0177)
Industrial production		0.0006 (0.0059)									
Working age population			-0.0213*** (0.0066)								
High educ. workers				-0.0062*** (0.0011)							
Border region					-0.0103 (0.0236)						
Distance to Berlin					0.0001 (0.0003)						
Hospital beds						-0.0023 (0.0015)					
Theater visitors (/1000)							-0.1009*** (0.0210)				
Cinema								-0.0129 (0.0108)			
Museum									0.0742** (0.0321)		
Art exhibitions										0.0500* (0.0293)	
Theater											0.0195 (0.0343)
Observations	2517	2517	2517	2517	2517	2517	2517	2509	826	827	826
Pseudo-R ²	0.0190	0.0190	0.0207	0.0213	0.0191	0.0200	0.0231	0.0223	0.0318	0.0302	0.0295

Notes: Probit regressions (marginal effects are shown). Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level.

Table 12: MARXIST-LENINIST IDEOLOGY (1988/89) - ADDITIONAL CONTROL VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dresden	-0.0474*** (0.0167)	-0.0432*** (0.0109)	-0.0614*** (0.0238)	-0.0466*** (0.0152)	-0.0989*** (0.0143)	-0.0454*** (0.0154)	-0.0322*** (0.0109)	-0.0684*** (0.0106)	-0.1685*** (0.0160)	-0.1687*** (0.0177)	-0.0169*** (0.0177)
Age	0.0391*** (0.0120)	0.0393*** (0.0120)	0.0385*** (0.0120)	0.0379*** (0.0122)	0.0396*** (0.0122)	0.0392*** (0.0122)	0.0383*** (0.0123)	0.0403*** (0.0124)	0.0596*** (0.0201)	0.0613*** (0.0214)	0.0618*** (0.0219)
Age squared	-0.0005** (0.0002)	-0.0005** (0.0002)	-0.0004** (0.0002)	-0.0004** (0.0002)	-0.0005** (0.0002)	-0.0005** (0.0002)	-0.0004** (0.0002)	-0.0005** (0.0002)	-0.0008** (0.0004)	-0.0008** (0.0004)	-0.0008** (0.0004)
Female	0.1336*** (0.0314)	0.1344*** (0.0310)	0.1333*** (0.0314)	0.1352*** (0.0320)	0.1312*** (0.0313)	0.1332*** (0.0321)	0.1355*** (0.0314)	0.1350*** (0.0321)	0.1560*** (0.0395)	0.1506*** (0.0396)	0.1524*** (0.0363)
Married	0.0104 (0.0301)	0.0116 (0.0291)	0.0090 (0.0292)	0.0103 (0.0298)	0.0079 (0.0288)	0.0105 (0.0300)	0.0097 (0.0296)	0.0130 (0.0289)	-0.0321 (0.0371)	-0.0431 (0.0384)	-0.0448 (0.0357)
Widowed/ Divorced	0.0155 (0.0157)	0.0161 (0.0147)	0.0156 (0.0162)	0.0180 (0.0162)	0.0158 (0.0162)	0.0156 (0.0153)	0.0194 (0.0158)	0.0218 (0.0138)	0.1098 (0.1022)	0.1040 (0.1054)	0.1109 (0.1057)
Children	-0.0285 (0.0346)	-0.0289 (0.0343)	-0.0277 (0.0340)	-0.0275 (0.0341)	-0.0280 (0.0344)	-0.0286 (0.0344)	-0.0265 (0.0345)	-0.0290 (0.0344)	-0.0235 (0.0378)	-0.0122 (0.0376)	-0.0162 (0.0403)
University	-0.0525** (0.0254)	-0.0527** (0.0255)	-0.0528** (0.0251)	-0.0535** (0.0247)	-0.0556** (0.0273)	-0.0527** (0.0264)	-0.0544** (0.0259)	-0.0558* (0.0286)	0.0032 (0.0495)	0.0064 (0.0492)	0.0129 (0.0506)
Intermed. education	0.0716* (0.0402)	0.0727* (0.0397)	0.0698* (0.0395)	0.0688* (0.0394)	0.0692* (0.0401)	0.0719* (0.0393)	0.0684* (0.0400)	0.0703* (0.0403)	0.0824 (0.0735)	0.0900 (0.0717)	0.0951 (0.0724)
High education	0.02430*** (0.0443)	0.2442*** (0.0442)	0.2421*** (0.0447)	0.2437*** (0.0453)	0.2431*** (0.0428)	0.2433*** (0.0441)	0.2437*** (0.0440)	0.2494*** (0.0420)	0.2005*** (0.0590)	0.2052*** (0.0595)	0.2050*** (0.0590)
Net income	0.0048 (0.0078)	0.0048 (0.0079)	0.0052 (0.0071)	0.0059 (0.0071)	0.0052 (0.0073)	0.0047 (0.0076)	0.0069 (0.0070)	0.0063 (0.0071)	0.0002 (0.0150)	-0.0011 (0.0155)	-0.0016 (0.0143)
Population density								-0.0002*** (0.00004)	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0003*** (0.0001)
Industrial employment								-0.0170*** (0.0037)	-0.0281*** (0.0597)	-0.0295*** (0.0069)	-0.0285*** (0.0064)
Agricultural employment								-0.0262*** (0.0064)	-0.0391*** (0.0098)***	-0.0416*** (0.0117)	-0.0405*** (0.0109)
Industrial production		-0.0015 (0.0035)									
Working age Population			-0.0076 (0.0103)								
High educ. workers				-0.0040*** (0.0015)							
Border region					-0.0579** (0.0256)						
Distance to Berlin					0.00003 (0.0002)						
Hospital beds						0.0003 (0.0017)					
Theater visitors (/1000)							-0.0716*** (0.0228)				
Cinema								-0.0029 (0.0176)			
Museum									0.0625 (0.0398)		
Art exhibitions										0.0519 (0.0357)	
Theater											0.0703 (0.0472)
Observations	2598	2598	2598	2598	2598	2598	2598	2590	854	854	853
Pseudo- R^2	0.062	0.0620	0.0622	0.0632	0.0629	0.0620	0.0646	0.0664	0.0883	0.0878	0.0879

Notes: Probit regressions (marginal effects are shown). Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level.

Table 13: DEVELOPMENT OF SOCIALIST ECONOMIES (1988/89)- ADDITIONAL CONTROL VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dresden	-0.0719*** (0.0236)	-0.0676*** (0.0165)	-0.1221*** (0.0346)	-0.0700*** (0.0194)	-0.1504*** (0.0044)	-0.0825*** (0.0198)	-0.0437*** (0.0107)	-0.0841*** (0.0186)	-0.0728*** (0.0178)	-0.0735*** (0.0184)	-0.0782*** (0.0176)
Age	-0.0460*** (0.0076)	-0.0457*** (0.0074)	-0.0484*** (0.0066)	-0.0485*** (0.0065)	-0.0468*** (0.0068)	-0.0465*** (0.0068)	-0.0477*** (0.0063)	-0.0471*** (0.0066)	-0.0531*** (0.0101)	-0.0537*** (0.0085)	-0.0506*** (0.0089)
Age squared	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0002)	0.0007*** (0.0001)	0.0007*** (0.0001)
Female	0.0684*** (0.0210)	0.0690*** (0.0207)	0.0685*** (0.0219)	0.0724*** (0.0223)	0.0664*** (0.0194)	0.0705*** (0.0212)	0.0729*** (0.0209)	0.0744*** (0.0181)	0.1204*** (0.0356)	0.1201*** (0.0358)	0.1170*** (0.0357)
Married	-0.0122 (0.0222)	-0.0111 (0.0215)	-0.0162 (0.0232)	-0.0109 (0.0230)	-0.0171 (0.0213)	-0.0121 (0.0230)	-0.0120 (0.0223)	-0.0031 (0.0186)	-0.0271 (0.0402)	-0.0241 (0.0409)	-0.0220 (0.0410)
Widowed/ Divorced/ Children	-0.0384 (0.0589) 0.0509	-0.0377 (0.0591) 0.0507	-0.0374 (0.0603) 0.0525	-0.0332 (0.0603) 0.0513	-0.0357 (0.0570) 0.0514	-0.0390 (0.0593) 0.0510	-0.0305 (0.0606) 0.0529	-0.0217 (0.0581) 0.0506	-0.0569 (0.0402) 0.0100*	-0.0544 (0.0473) 0.0985*	-0.0447 (0.0479) 0.0965*
University	-0.0426* (0.0235)	-0.0425* (0.0234)	-0.0450* (0.0253)	-0.0465* (0.0247)	-0.0479* (0.0263)	-0.0425* (0.0233)	-0.0478* (0.0258)	-0.0492 (0.0246)	-0.0040 (0.0490)	-0.0037 (0.0479)	0.0041 (0.0462)
Intermed. education High education	-0.0426 (0.0277)	-0.0415 (0.0285)	-0.0489 (0.0300)	-0.0475 (0.0298)	-0.0488 (0.0316)	-0.0440* (0.0266)	-0.0473 (0.0316)	-0.0430 (0.0313)	-0.0440 (0.0443)	-0.0536 (0.0411)	-0.0636 (0.0432)
Net income	0.0009 (0.0053)	0.0009 (0.0053)	0.0025 (0.0056)	0.0031 (0.0052)	0.0021 (0.0263)	0.0014 (0.0050)	0.0046 (0.0056)	0.0041 (0.0051)	0.0059 (0.0072)	0.0068 (0.0070)	0.0064 (0.0073)
Population density								-0.0001 (0.0001)	-0.0002** (0.0001)	-0.0002** (0.0001)	-0.0002** (0.00019)
Industrial employment								-0.0116 (0.0085)	-0.0191** (0.0090)	-0.0189** (0.0093)	-0.0196** (0.0093)
Agricultural employment								-0.0141 (0.0163)	-0.0301* (0.0164)	-0.0295* (0.0170)	-0.0308* (0.0170)
Industrial production		-0.0016 (0.0072)									
Working age Population			-0.0275** (0.0133)								
High educ. workers				-0.0076*** (0.0017)							
Border region					-0.0874*** (0.0223)						
Distance to Berlin					0.0003 (0.0003)						
Hospital beds						-0.0013 (0.0029)					
Theater visitors (*1/1000) Cinema							-0.1276*** (0.0222)	-0.0046 (0.0258)			
Museum									0.0211 (0.0390)		
Art exhibitions Theater										0.0194 (0.0232)	0.0141 (0.0318)
Observations	2607	2607	2607	2607	2607	2607	2607	2599	857	858	857
Pseudo-R ²	0.0217	0.0217	0.0246	0.0251	0.0243	0.0220	0.0283	0.0279	0.0428	0.0435	0.0420

Notes: Probit regressions (marginal effects are shown). Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level.

Table 14: DEVELOPMENT OF GDR DEMOCRACY (1988/89) - ADDITIONAL CONTROL VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dresden	-0.0655** (0.0260)	-0.0799*** (0.0175)	-0.1350*** (0.0221)	-0.0638*** (0.0195)	-0.1277*** (0.0155)	-0.0842*** (0.0208)	-0.0380*** (0.0115)	-0.0848*** (0.0270)	-0.1020*** (0.0392)	-0.1047*** (0.0299)	-0.1063*** (0.0261)
Age	-0.0154 (0.0145)	-0.0162 (0.0144)	-0.0188 (0.0147)	-0.0182 (0.0148)	-0.0172 (0.0146)	-0.0163 (0.0145)	-0.0172 (0.0148)	-0.0184 (0.0152)	-0.0201 (0.0212)	-0.0192 (0.0229)	-0.0151 (0.0218)
Age squared	0.0003 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0003 (0.0003)	0.0003 (0.0003)	0.0003 (0.0004)	0.0002 (0.0003)
Female	0.0617*** (0.0237)	0.0594** (0.0248)	0.0619*** (0.0230)	0.0662*** (0.0227)	0.0612*** (0.0218)	0.0653*** (0.0223)	0.0663*** (0.0221)	0.0683*** (0.0203)	0.0968*** (0.0281)	0.0900*** (0.0272)	0.0891*** (0.0271)
Married	-0.0204 (0.0263)	-0.0240 (0.0255)	-0.0259 (0.0255)	-0.0190 (0.0242)	-0.0241 (0.0269)	-0.0203 (0.0258)	-0.0203 (0.0224)	-0.0181 (0.0226)	-0.0135 (0.0341)	-0.0137 (0.0348)	-0.0107 (0.0354)
Widowed/ Divorced Children	0.0058 (0.0693) 0.0633**	0.0033 (0.0706) 0.0642**	0.0059 (0.0255) 0.0659**	0.0113 (0.0708) 0.0640**	0.0081 (0.0685) 0.0634**	0.0045 (0.0710) 0.0636**	0.0130 (0.0709) 0.0657**	0.0202 (0.0670) 0.0633**	0.0373 (0.0578) 0.1006	0.0407 (0.0564) 0.1011	0.0571 (0.0570) 0.0938
University	-0.0878* (0.0529)	-0.0878* (0.0524)	-0.0917* (0.0496)	-0.0926* (0.0505)	-0.0939* (0.0504)	-0.0876* (0.0524)	-0.0936* (0.0268)	-0.0932* (0.0494)	-0.2061** (0.1019)	-0.2048** (0.0997)	-0.1902* (0.0994)
Intermed. education	-0.0549 (0.0401)	-0.0587 (0.0380)	-0.0633* (0.0385)	-0.0602 (0.0390)	-0.0615 (0.0395)	-0.0574 (0.0385)	-0.0594 (0.0398)	-0.0579 (0.0378)	-0.0617 (0.0634)	-0.0565 (0.0603)	-0.0637 (0.0635)
High education	-0.0493 (0.0429)	-0.0531 (0.0413)	-0.0521 (0.0404)	-0.0465 (0.0412)	-0.0475 (0.0418)	-0.0516 (0.0417)	-0.0462 (0.0424)	-0.0415 (0.0407)	-0.0529 (0.1058)	-0.0532 (0.1039)	-0.0564 (0.1074)
Net income	0.0050 (0.0063)	0.0050 (0.0061)	0.0072 (0.0044)	0.0074* (0.0042)	0.0063 (0.0045)	0.0058 (0.0051)	0.0087 (0.0046)	0.0074* (0.0044)	0.0149* (0.0081)	0.0153* (0.0082)	0.0154* (0.0089)
Population density								-0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)
Industrial employment								-0.0065 (0.0101)	-0.0017 (0.0127)	-0.0027 (0.0125)	-0.0031 (0.0125)
Agricultural employment								-0.0099 (0.0194)	-0.0023 (0.0237)	-0.0046 (0.0226)	-0.0055 (0.0228)
Industrial production		0.0052 (0.0079)									
Working age Population			-0.0379*** (0.0065)								
High educ. workers				-0.0085*** (0.0010)							
Border region					-0.0679** (0.0273)						
Distance to Berlin					0.0004 (0.0003)						
Hospital beds						-0.0023 (0.0029)					
Theater visitors (*1/1000)							-0.1285*** (0.0189)				
Cinema								0.0098 (0.0194)			
Museum									0.0529 (0.0324)		
Art exhibitions										0.0445*** (0.0168)	
Theater											-0.0090 (0.0422)
Observations	2603	2603	2603	2603	2603	2603	2603	2595	856	857	856
Pseudo- R^2	0.0091	0.0095	0.0143	0.0133	0.0116	0.0101	0.0156	0.0138	0.0279	0.0269	0.0253

Notes: Probit regressions (marginal effects are shown). Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level.

Table 15: REPORTING OF GDR MEDIA (1988/89) - ADDITIONAL CONTROL VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dresden	-0.1355*** (0.0245)	-0.1436*** (0.0175)	-0.1759*** (0.0231)	-0.1341*** (0.0218)	-0.1978*** (0.0082)	-0.1420*** (0.0233)	-0.1135*** (0.0174)	-0.1534*** (0.0202)	-0.1126*** (0.0162)	-0.1116*** (0.0154)	-0.1152*** (0.0130)
Age	-0.0019 (0.0102)	-0.0024 (0.0106)	-0.0039 (0.0111)	-0.0036 (0.0110)	-0.0016 (0.0119)	-0.0022 (0.0107)	-0.0033 (0.0114)	-0.0028 (0.0127)	0.0106 (0.0161)	0.0116 (0.0161)	0.0149 (0.0144)
Age squared	0.0001 (0.0339)	0.0001 (0.0002)	0.0001 (0.0002)	0.0001 (0.0110)	0.0001 (0.0002)	0.0001 (0.0002)	0.0001 (0.0002)	0.0001 (0.0002)	-0.0002 (0.0003)	-0.0002 (0.0003)	-0.0002 (0.0003)
Female	0.1541*** (0.0339)	0.1527*** (0.0350)	0.1538*** (0.0325)	0.1565*** (0.0328)	0.1513*** (0.0318)	0.1554*** (0.0319)	0.1569*** (0.0314)	0.1531*** (0.0328)	0.1991*** (0.0374)	0.1970*** (0.0367)	0.1946*** (0.0359)
Married	-0.0671*** (0.0194)	-0.0691*** (0.0180)	-0.0704*** (0.0182)	-0.0662*** (0.0182)	-0.0716*** (0.0201)	-0.0670*** (0.0190)	-0.0671*** (0.0172)	-0.0664*** (0.0183)	-0.0770*** (0.0220)	-0.0876*** (0.0168)	-0.0851*** (0.0186)
Widowed/ Divorced/ Children	0.0059 (0.0258) 0.0405 (0.0319)	0.0045 (0.0251) 0.0410 (0.0317)	0.0065 (0.0281) 0.0423 (0.0322)	0.0096 (0.0280) 0.0413 (0.0322)	0.0073 (0.0270) 0.0417 (0.0323)	0.0054 (0.0254) 0.0406 (0.0318)	0.0124 (0.0276) 0.0430 (0.0320)	0.0179 (0.0307) 0.0404 (0.0320)	-0.0476 (0.1046) 0.0177 (0.0510)	-0.0562 (0.1069) 0.0271 (0.0464)	-0.0507 (0.1094) 0.0248 (0.0484)
University	-0.1884*** (0.0348)	-0.1882*** (0.0340)	-0.1906*** (0.0304)	-0.1916*** (0.0307)	-0.1910*** (0.0319)	-0.1885*** (0.0339)	-0.1932*** (0.0303)	-0.1933*** (0.0318)	-0.1071*** (0.0417)	-0.1075*** (0.0426)	-0.1019** (0.0426)
Intermed. education	-0.0846*** (0.0296)	-0.0866*** (0.0296)	-0.0891*** (0.0304)	-0.0871*** (0.0300)	-0.0873*** (0.0312)	-0.0854*** (0.0289)	-0.0871*** (0.0308)	-0.0874*** (0.0319)	-0.0829 (0.0583)	-0.0697 (0.0603)	-0.0793 (0.0604)
High education	-0.0854* (0.0514)	-0.0875* (0.0523)	-0.0867* (0.0509)	-0.0831 (0.0510)	-0.0851* (0.0491)	-0.0862* (0.0520)	-0.0821 (0.0509)	0.0799 (0.0518)	-0.1240 (0.1010)	-0.1112 (0.1030)	-0.1194 (0.1074)
Net income	0.0109 (0.0105)	0.0109 (0.0105)	0.0122 (0.0101)	-0.0124 (0.0105)	0.0115 (0.0103)	0.0112 (0.0105)	0.0138 (0.0103)	0.0124 (0.0103)	0.0127 (0.0116)	0.0109 (0.0106)	0.0108 (0.0104)
Population density								-0.0002** (0.0001)	-0.0002 (0.0001)	-0.0003 (0.0001)	-0.0002 (0.0001)
Industrial employment								-0.0132* (0.0074)	-0.0012 (0.0064)	-0.0020 (0.0110)	-0.0022 (0.0059)
Agricultural employment								-0.0212 (0.0138)	0.0029 (0.0121)	0.0013 (0.0110)	0.0009 (0.0111)
Industrial production		0.0030 (0.0051)									
Working age			-0.0223*** (0.0039)								
Population High educ. workers				-0.0051*** (0.0013)							
Border region					-0.0704*** (0.0205)						
Distance to Berlin					0.0001 (0.0003)						
Hospital beds						-0.0008 (0.0020)					
Theater visitors (/1000)							-0.9793*** (0.2445)				
Cinema								-0.0172 (0.0146)			
Museum									0.0027 (0.0262)		
Art exhibitions										0.0114 (0.0333)	
Theater											-0.0120 (0.0323)
Observations	2571	2571	2571	2571	2571	2571	2571	2563	848	849	848
Pseudo- R^2	0.0401	0.0403	0.0424	0.0419	0.0416	0.0403	0.0447	0.0442	0.0477	0.0475	0.0469

Notes: Probit regressions (marginal effects are shown). Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level.

Table 16: LIFE IN THE GDR (1988/89) - ADDITIONAL CONTROL VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dresden	-0.0557*** (0.0081)	-0.0403*** (0.0039)	-0.0470*** (0.0167)	-0.0556*** (0.0081)	-0.0597*** (0.0075)	-0.0515*** (0.0121)	-0.0523*** (0.0063)	-0.0504*** (0.0066)	-0.0433*** (0.0143)	-0.0431*** (0.0137)	-0.0464*** (0.0139)
Age	-0.0063 (0.0083)	-0.0055 (0.0084)	-0.0059 (0.0084)	-0.0064 (0.0082)	-0.0060 (0.0084)	-0.0061 (0.0083)	-0.0064 (0.0083)	-0.0054 (0.0084)	0.0075 (0.0109)	0.0076 (0.0112)	0.0094 (0.0095)
Age squared	0.0002 (0.0001)	0.0002 (0.0001)	0.0002 (0.0001)	0.0002 (0.0001)	0.0002 (0.0001)	0.0002 (0.0001)	0.0002 (0.0001)	0.0001 (0.0001)	-0.0001 (0.0002)	-0.0001 (0.0002)	-0.0001 (0.0001)
Female	0.0335*** (0.0125)	0.0369*** (0.0127)	0.0339*** (0.0122)	0.0336*** (0.0125)	0.0332*** (0.0129)	0.0330** (0.0130)	0.0337*** (0.0122)	0.0371*** (0.0140)	0.0350*** (0.0115)	0.0340*** (0.0115)	0.0317*** (0.0120)
Married	-0.0212 (0.0326)	-0.0167 (0.0308)	-0.0205 (0.0320)	-0.0211 (0.0327)	-0.0213 (0.0326)	-0.0210 (0.0322)	-0.0210 (0.0326)	-0.0148 (0.0296)	0.0040 (0.0336)	-0.0011 (0.0316)	-0.0008 (0.0325)
Widowed/ Divorced	-0.0305 (0.0410)	-0.0291 (0.0415)	-0.0311 (0.0414)	-0.0299 (0.0406)	-0.0308 (0.0412)	-0.0305 (0.0413)	-0.0290 (0.0403)	-0.0253 (0.0389)	0.0307 (0.0390)	0.0257 (0.0356)	0.0288 (0.0415)
Children	0.0228 (0.0224)	0.0216 (0.0218)	0.0225 (0.0222)	0.0229 (0.0224)	0.0228 (0.0224)	0.0226 (0.0222)	0.0230 (0.0223)	0.0200 (0.0212)	0.0012 (0.0354)	0.0070 (0.0297)	0.0054 (0.0333)
University	0.0149 (0.0361)	0.0150 (0.0381)	0.0161 (0.0358)	0.0142 (0.0349)	0.0155 (0.0357)	0.0150 (0.0368)	0.0132 (0.0349)	0.0112 (0.0362)	0.0221 (0.0927)	0.0253 (0.0943)	0.0305 (0.0986)
Intermed. education	0.0520*** (0.0161)	0.0550*** (0.0145)	0.0528*** (0.0162)	0.0517*** (0.0166)	0.0523*** (0.0156)	0.0523*** (0.0162)	0.0515*** (0.0165)	0.0569*** (0.0137)	0.0592* (0.0346)	0.0581* (0.0347)	0.0547 (0.0362)
High education	0.0657 (0.0467)	0.0679 (0.0461)	0.0653 (0.0462)	0.0662 (0.0460)	0.0650 (0.0461)	0.0657 (0.0464)	0.0666 (0.0461)	0.0726* (0.0440)	0.0689 (0.0826)	0.0673 (0.0844)	0.0551 (0.0910)
Net income	-0.0014 (0.0033)	-0.0013 (0.0033)	-0.0016 (0.0034)	-0.0013 (0.0034)	-0.0015 (0.0032)	-0.0016 (0.0034)	-0.0010 (0.0034)	-0.0004 (0.0032)	-0.0093* (0.0054)	-0.0094* (0.0055)	-0.0105** (0.0050)
Population density								-0.0001* (0.00002)	-0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)
Industrial employment								-0.0064** (0.0026)	-0.0088 (0.0062)	-0.0092 (0.0063)	-0.0088 (0.0062)
Agricultural employment								-0.0055 (0.0048)	-0.0054 (0.0105)	-0.0060 (0.0108)	-0.0057* (0.0289)
Industrial production		-0.0059*** (0.0015)									
Working age			0.0049 (0.0080)								
Population High educ. workers				-0.0006 (0.0012)							
Border region					-0.0047 (0.0150)						
Distance to Berlin					-0.0001 (0.0001)						
Hospital beds						0.0006 (0.0010)					
Theater visitors (/1000)							-0.1678 (0.1588)				
Cinema								-0.0155*** (0.0057)			
Museum									0.0268 (0.0183)		
Art exhibitions										0.0225 (0.0402)	
Theater											0.0518* (0.0289)
Observations	2603	2603	2603	2603	2603	2603	2603	2603	852	852	851
Pseudo- R^2	0.0384	0.0435	0.0391	0.0386	0.0387	0.0389	0.0393	0.0500	0.0638	0.0626	0.0685

Notes: Probit regressions (marginal effects are shown). Robust standard errors in parentheses, clustered at district level. ***/**/* denotes significance at the 1%/5%/10% level.

7 Conclusion

This paper exploits a natural experiment on Western television reception in the former GDR to analyze the impact of Western television on East Germans' attitudes as well as beliefs before and up to one decade after reunification. I find that the availability of West German television has increased the degree of satisfaction with several aspects of real-existing socialism and the belief that effort rather than luck determines success in life. While the effect of Western television on specific attitudes towards the GDR and socialism does diminish soon after the fall of the Berlin wall, the differential access to Western media is reflected in personal beliefs up to ten years after the fall of the Berlin wall. Although individuals from the "valley of the clueless" had long access to Western television broadcasts and experienced life in the FRG on their own, they still believe more often that luck drives success in the mid to late 1990s. The results are robust to variation in the control group and the inclusion of further variables that account for different explanations for the effects.

The findings shed a light on the impact of biased media. First, the usage of television as an instrument of indoctrination or propaganda might not be very successful as individuals who only received the state-controlled GDR broadcasts seemed to be less supportive towards the regime (see also Kern and Hainmueller, 2009). The impact on these attitudes towards socialism and the situation in the GDR seem to be highly context-dependent as any impact of differential access to Western television diminished soon in the process of the German reunification. This suggests that these direct effects of media (bias) have only short-term consequences. Second, East Germans had watched Western television for entertainment which made life in socialism more bearable. This might explain why those having access to these broadcasts had been more confident with the GDR. Third, the entertainment aspect of Western television may have also affected more lasting economic beliefs. Western movies, and soap operas (also from the U.S.) had not only offered an opportunity to escape everyday life but also offered a "window to the Western world" with its values and norms. By learning about how effort pays off (at least in capitalism), East Germans were affected in their economic beliefs. By this, the state-controlled media seem to be one part of the socialization in the GDR that has left its marks in East Germans minds (Alesina and Fuchs-Schündeln, 2007).

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Appendix

Table 17: DISTRICT-LEVEL CHARACTERISTICS - GDR SAMPLE

	(1) Dresden	(2) GDR	(1) - (2) (p-value)	(3) excl. Berlin	(1)-(3) (p-value)	(4) excl. Berlin & Cottbus	(1)-(4) (p-value)	(5) Saxony	(1) - (5) (p-value)
Population density	254	598.71	-344.71 (0.4538)	169.5	84.5 (0.0822)	182.2	71.8 (0.1866)	285	-31 (0.3193)
Female population (% district pop.)	52.6	52.15	0.45 (0.0925)	52.11	0.49 (0.1191)	52.26	0.34 (0.2629)	52.85	-0.25 (0.4120)
Working age population (% district pop.)	62.9	64.9	-2 (0.0066)	64.5	-1.6 (0.0032)	64.34	-1.44 (0.0100)	63.75	-0.85 (0.3656)
High educated workers (% working age pop.)	20.6	20.7	-0.1 (0.9739)	18.62	1.98 (0.0108)	18.74	1.86 (0.0354)	18.85	1.75 (0.5177)
Relative Labor Income	99	101	-2 (0.2741)	100.67	-1.67 (0.4265)	98.8	0.2 (0.7489)	98.5	0.5 (0.7952)
Industrial employment (% total empl.)	42.8	36.19	6.61 (0.1027)	38	4.8 (0.2234)	37.1	5.7 (0.2354)	44	-1.2 (0.8187)
Agricultural employment (% total empl.)	8.1	10.67	-2.57 (0.3535)	12.28	-4.18 (0.1351)	12.58	-4.48 (0.1916)	7.15	0.95 (0.5604)
Industrial production (% GDR ind. prod.)	10.7	6.87	3.83 (0.0151)	7.1	3.6 (0.0413)	7.3	3.4 (0.1003)	10.15	0.55 (0.8536)
Hospital beds (per 10,000 inhabit.)	95.7	100.76	-5.06 (0.4038)	98.25	-2.55 (0.6869)	102.88	-7.18 (0.1943)	105.8	-10.1 (0.5842)
Theater visitors (% district pop.)	0.0019	0.0016	0.0003 (0.1620)	0.0014	0.0005 (0.0119)	0.0015	0.0004 (0.0710)	0.0014	0.0005 (0.0340)

Comparison of mean values for treatment and control groups. The control in (2) includes the districts Berlin, Cottbus, Erfurt, Karl-Marx-Stadt, Leipzig, Magdeburg, and Schwerin.

Sources: Statistisches Amt der DDR (1989), population density and share of female population (Statistisches Amt der DDR, 1990), labor income and share of working population with university degree (Kind, 1997).

Table 18: Correlation between district-level characteristics

	Pop. density	Female pop.	Pop. change (1955-88)	Working age pop.	High educ. workers	Rel. labor inc.	Industrial empl.	Agricult. empl.	Indust. prod.	Hospital beds	Dwellings	Theater visitors	Border region	Distance Berlin	GDR	excl. Berlin	excl. Berlin & Cottbus	Saxony
Pop. density	1.0000																	
Female pop.	0.0848	1.0000																
Pop. change (1955-88)	(0.0000)	(0.0000)	1.0000															
Working age pop.	0.7663	-0.4632	0.7904	1.0000														
High educ. workers	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000													
Rel. labor inc.	0.9615	-0.0113	0.8583	0.7439	0.6272	1.0000												
Industrial empl.	(0.0000)	0.501	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000											
Agricult. empl.	0.5653	-0.44	0.7699	0.7021	0.6272	1.0000												
Indust. prod.	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000										
Hospital beds	-0.5685	0.625	-0.5765	-0.7934	-0.6262	-0.5372	1.0000											
Dwellings	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000									
Theater visitors	-0.6612	-0.7013	-0.4145	-0.1706	-0.5914	-0.2153	-0.2225	1.0000										
Border region	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000								
Distance Berlin	-0.3063	0.8564	-0.5249	-0.752	-0.3883	-0.5338	0.8841	-0.4523	1.0000									
GDR	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000							
excl. Berlin	0.5495	-0.1126	0.3778	0.6838	0.6225	0.3594	-0.5783	-0.214	-0.5146	1.0000								
excl. Berlin & Cottbus	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000						
Saxony	0.7376	0.6867	0.3125	0.2343	0.6447	0.1923	-0.0526	-0.8653	0.3269	0.2928	1.0000							
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000					
	0.8295	0.0801	0.7686	0.5376	0.8785	0.3452	-0.403	-0.6103	-0.1788	0.458	0.53	1.0000						
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000					
	0.2165	-0.2497	0.1312	0.4909	0.0196	-0.1119	-0.3128	0.1447	-0.3264	0.0916	-0.0523	0.032	1.0000					
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.2411)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0018)	(0.0559)	1.0000					
	-0.8414	0.0201	-0.6322	-0.6831	-0.8418	-0.6975	0.6798	0.4393	0.3575	-0.5266	-0.6918	-0.5625	-0.0159	1.0000				
	(0.0000)	(0.2295)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.3419)	1.0000				
	-0.1672	0.259	-0.1008	-0.5639	-0.0024	-0.1173	0.2956	-0.1339	0.4372	-0.34	0.0537	0.2174	-0.7839	0.0681	1.0000			
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.8841)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0014)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000		
	0.3459	0.2661	0.1217	-0.7018	0.6981	-0.0028	0.2278	-0.322	0.4009	-0.2847	0.2647	0.6768	-0.7743	-0.1869	1.0000	1.0000		
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.8767)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000	
	0.3381	0.2545	0.2112	-0.7026	0.6958	0.1136	0.2327	-0.3222	0.395	-0.3529	0.2559	0.7281	-0.8062	-0.2169	1.0000	1.0000	1.0000	
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	1.0000
	-0.8534	-0.785	0.9714	-0.6491	0.703	0.4721	-0.4512	0.6689	-0.1154	-0.2664	-0.8356	0.9973	-0.7169	-0.4273	1.0000	1.0000	1.0000	1.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.8767)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)

Table 19: SUMMARY STATISTICS - GDR 1988/89

Variables	Whole sample					Treatment group			GDR			Control groups												
	Obs.	Mean	Std.Dev.	Min.	Max.	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.	excl. Berlin			excl. Berlin & Cottbus			Leipzig & Karl-Marx-Stadt						
	Obs.	Mean	Std.Dev.	Min.	Max.	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.	
Dependent variables																								
Effort pays off	3381	0.58	0.49	0	1	736	0.53	0.50	2645	0.60	0.49	2254	0.61	0.49	2198	0.61	0.49	860	0.62	0.49				
Marxist-Leninist	3516	0.65	0.48	0	1	775	0.60	0.49	2741	0.66	0.48	2323	0.66	0.47	2263	0.67	0.47	894	0.69	0.46				
Socialist economies	3527	0.45	0.50	0	1	773	0.38	0.49	2754	0.47	0.50	2337	0.50	0.50	2277	0.50	0.50	899	0.49	0.50				
Socialist democracy	3524	0.52	0.50	0	1	772	0.46	0.50	2752	0.53	0.50	2333	0.55	0.50	2273	0.55	0.50	898	0.58	0.50				
GDR media	3455	0.36	0.48	0	1	758	0.27	0.44	2697	0.39	0.49	2290	0.40	0.49	2230	0.40	0.49	877	0.42	0.49				
Living GDR	3520	0.91	0.28	0	1	775	0.85	0.35	2745	0.93	0.26	2327	0.93	0.26	2268	0.93	0.25	897	0.92	0.27				
Explanatory variables																								
Age	3497	23.09	6.38	15	50	770	23.36	6.36	2727	23.02	6.38	2314	22.97	6.19	2255	23.12	6.20	891	24.13	6.74				
Female	3526	0.48	0.50	0	1	777	0.51	0.50	2749	0.47	0.50	2332	0.48	0.50	2272	0.49	0.50	900	0.60	0.49				
Never married	3525	0.68	0.47	0	1	777	0.65	0.48	2748	0.69	0.46	2331	0.69	0.45	2273	0.68	0.47	900	0.56	0.50				
Married	3525	0.28	0.45	0	1	777	0.32	0.47	2748	0.27	0.45	2331	0.27	0.45	2273	0.28	0.45	900	0.40	0.49				
Divorced/Widowed	3525	0.04	0.19	0	1	777	0.04	0.18	2748	0.04	0.20	2331	0.04	0.19	2273	0.04	0.19	900	0.04	0.20				
Children	3507	0.33	0.47	0	1	773	0.38	0.49	2734	0.31	0.46	2318	0.31	0.46	2260	0.32	0.47	891	0.40	0.49				
Net income	2742	3.91	1.87	1	9	594	4.02	1.87	2148	3.88	1.86	1859	3.80	1.83	1849	3.82	1.82	730	3.86	1.86				
Low education	3531	0.09	0.29	0	1	778	0.09	0.28	2753	0.10	0.29	2336	0.09	0.29	2276	0.09	0.29	903	0.06	0.25				
Intermed. education	3531	0.80	0.40	0	1	778	0.81	0.40	2753	0.80	0.40	2336	0.81	0.39	2276	0.81	0.39	903	0.81	0.40				
High education	3531	0.10	0.31	0	1	778	0.11	0.31	2753	0.10	0.30	2336	0.10	0.30	2276	0.10	0.30	903	0.13	0.34				
University	3479	0.06	0.23	0	1	769	0.08	0.27	2710	0.05	0.22	2297	0.05	0.22	2241	0.05	0.22	893	0.07	0.25				

Table 20: SUMMARY STATISTICS - SOEP DATA

Variable	Whole sample					Treatment group			GDR			Control groups			Saxony					
	Obs	Mean	Std.Dev.	Min	Max	Obs	Mean	Std.Dev.	Obs	Mean	Std.Dev.	Obs	Mean	Std.Dev.	Obs	Mean	Std.Dev.	Obs	Mean	Std.Dev.
Dependent variables																				
Social security GDR	4412	0.43	0.50	0	1	455	0.42	0.49	3938	0.43	0.50	3805	0.43	0.50	3508	0.44	0.50	876	0.43	0.50
Democracy GDR	4411	0.42	0.49	0	1	456	0.40	0.49	3936	0.43	0.49	3803	0.43	0.50	3506	0.44	0.50	876	0.47	0.50
Life GDR	11691	4.31	1.69	0	10	1217	4.44	1.67	10424	4.29	1.69	10108	4.28	1.69	9325	4.33	1.68	2267	4.18	1.65
Luck	13910	0.22	0.41	0	1	1409	0.25	0.43	12431	0.22	0.41	12049	0.22	0.41	11118	0.22	0.42	2794	0.22	0.42
Explanatory variables																				
Age	71505	39.04	20.08	17	100	7616	36.52	19.91	63574	39.32	20.09	61813	39.23	20.11	56772	39.43	20.17	13808	41.63	20.39
Female	71505	0.51	0.50	0	1	7616	0.53	0.50	63574	0.51	0.50	61813	0.51	0.50	56772	0.51	0.50	13808	0.51	0.50
Father's education	59010	2.44	0.7	0	4	6360	2.50	0.73	52360	2.43	0.70	51077	2.43	0.70	46899	2.40	0.69	11472	2.40	0.69
Never married	55935	0.21	0.40	0	1	5603	0.20	0.40	50064	0.21	0.41	48553	0.21	0.40	44857	0.20	0.40	11282	0.18	0.39
Married	51899	0.64	0.48	0	1	5174	0.67	0.47	46475	0.64	0.48	45072	0.64	0.48	41633	0.65	0.48	10463	0.66	0.47
Married but separated	51942	0.01	0.10	0	1	5177	0.01	0.10	46515	0.01	0.10	45111	0.01	0.10	41666	0.01	0.10	10471	0.01	0.10
Widowed or divorced	51966	0.13	0.33	0	1	5178	0.11	0.31	46538	0.13	0.33	45134	0.13	0.33	41688	0.13	0.33	10476	0.13	0.34
Not employed	54368	0.03	0.17	0	1	5412	0.03	0.17	48702	0.03	0.16	47251	0.03	0.16	43640	0.03	0.17	10964	0.03	0.17
Pensioner	54368	0.22	0.41	0	1	5412	0.18	0.39	48702	0.22	0.41	47251	0.22	0.41	43640	0.22	0.42	10964	0.24	0.43
In education	54368	0.05	0.22	0	1	5412	0.05	0.23	48702	0.05	0.22	47251	0.05	0.22	43640	0.05	0.21	10964	0.04	0.20
Unemployed	54368	0.11	0.31	0	1	5412	0.10	0.30	48702	0.11	0.31	47251	0.11	0.31	43640	0.11	0.31	10964	0.10	0.31
Self-employed	54368	0.04	0.20	0	1	5412	0.05	0.22	48702	0.04	0.20	47251	0.04	0.20	43640	0.04	0.20	10964	0.04	0.19
Civil servant	54368	0.01	0.11	0	1	5412	0.00	0.07	48702	0.01	0.12	47251	0.01	0.12	43640	0.01	0.11	10964	0.01	0.11
White collar	54546	0.27	0.44	0	1	5420	0.28	0.45	48869	0.26	0.44	47408	0.26	0.44	43787	0.26	0.44	11007	0.26	0.44
Blue collar	54546	0.22	0.42	0	1	5420	0.23	0.42	48869	0.22	0.42	47408	0.22	0.42	43787	0.23	0.42	11007	0.23	0.42
University degree	61258	0.22	0.42	0	1	6190	0.24	0.43	54778	0.22	0.41	53225	0.22	0.41	48997	0.21	0.40	12212	0.20	0.40
High education	57425	0.14	0.34	0	1	5608	0.15	0.36	51534	0.14	0.34	50010	0.14	0.34	46202	0.12	0.33	11698	0.13	0.34
Intermed. education	53815	0.77	0.42	0	1	5295	0.76	0.43	48258	0.77	0.42	46792	0.77	0.42	43272	0.78	0.42	10960	0.76	0.43
Low education	53826	0.08	0.28	0	1	5297	0.08	0.27	48267	0.09	0.28	46801	0.09	0.28	43280	0.09	0.29	10962	0.10	0.30
No. persons in household	66357	3.10	1.22	1	8	6970	3.32	1.15	59095	3.07	1.23	57477	3.08	1.23	52866	3.10	1.24	12898	2.89	1.13
No. children in household	66357	0.83	0.99	0	6	6970	1.06	1.01	59095	0.81	0.99	57477	0.82	0.99	52866	0.81	1.00	12898	0.69	0.92
Available household income	54846	29,783	14,768	0	256,099	5690	30,698	14,043	48907	29,685	14,853	47580	29,767	14,903	43751	29,415	14,638	10763	28,140	13,543
West Germany	71109	0.04	0.20	0	1	7611	0.05	0.22	63188	0.04	0.19	61428	0.04	0.19	56387	0.04	0.19	13799	0.05	0.22

Table 21: Variable Explanation - GDR Survey Data 1988/89

Variable	Unit	Explanation	Categories
Dependent variables			
Effort pays off	Dummy	A high level of effort pays off for the society as well as for oneself.	1, if the respondent agrees (totally).
Marxist-Leninist	Dummy	Agreement with Marxist-Leninist worldview.	1, if the respondent agrees (totally).
GDR media	Dummy	Feel well informed about the recent events by GDR press, radio and television.	1, if the respondent feels (very) well informed.
Life GDR	Dummy	Like living in the GDR.	1, if the respondent agrees (totally).
Socialist economies	Dummy	Confidence in the economic development of socialist countries up to the year 2000.	1, if the respondent is (totally) confident.
Socialist democracy	Dummy	Confidence in the development of socialist democracy in the GDR up to the year 2000.	1, if the respondent is (totally) confident.
Explanatory variables			
Dresden	Dummy	Place of residence in the district of Dresden.	1, if the respondent lives in Dresden-district.
Age	Discrete variable	Age of the respondent.	15 - 50
Female	Dummy	Gender of the respondent.	1, if the respondent is female.
Never married	Dummy	Family status of the respondent.	1, if the respondent has been never married.
Married	Dummy	Family status of the respondent.	1, if the respondent is married.
Widowed or divorced	Dummy	Family status of the respondent.	1, if the respondent is either widowed or divorced.
Children	Dummy	Respondent has children.	1, if the respondent has children.
University	Dummy	Respondent's level of education.	1, if the respondent has a university degree.
High education	Dummy	Respondent's level of education.	1, if the respondent has finished 12th grade.
Intermediate education	Dummy	Respondent's level of education.	1, if the respondent has finished 10th grade.
Low education	Dummy	Respondent's level of education.	1, if the respondent has finished 8th grade or left school without a degree.
Net income	Categorical variable	Respondent's net income.	1 (500 Mark) - 9 (more than 1500 Mark)

Table 22: Variable Explanation - SOEP data

Variable	Unit	Explanation	Categories	SOEP wave
Dependent variables				
Luck	Dummy	What you achieve in life is mainly a matter of luck.	1, if the respondent agrees (totally).	1994-96, 1999
Social security GDR	Dummy	Satisfaction with social security in the GDR.	1, if the respondent is (totally) satisfied.	1990
Democracy GDR	Dummy	Satisfaction with the democracy in the GDR.	1, if the respondent is (totally) satisfied.	1990
Life GDR	Dummy	Satisfaction with the general standard of living in the GDR.	1, if the respondent is (totally) satisfied.	1991-93
Explanatory variables				
Dresden	Dummy	Place of residence in the area of the former district of Dresden.	1, if the respondent had lived in Dresden-district in spring 1990.	1990
Age	Discrete variable	Age of the respondent.	17-100	
Female	Dummy	Gender of the respondent.	1, if the respondent is female.	
Never married	Dummy	Family status of the respondent.	1, if the respondent has been never married.	
Married	Dummy	Family status of the respondent.	1, if the respondent is married.	
Widowed or divorced	Dummy	Family status of the respondent.	1, if the respondent is either widowed or divorced.	
Farther's education				
University	Dummy	Respondent's level of education.	1, if the respondent has a university degree.	
Low education	Dummy	Respondent's years of schooling.	1, if the respondent has attended school for less than 9 years.	
Intermediate education	Dummy	Respondent's years of schooling.	1, if the respondent has attended school for at least 9 but less than 13 years.	
High education	Dummy	Respondent's years of schooling.	1, if the respondent has attended school or university for at least 13 years.	
Available household income	Continuous variable	Respondent's yearly real available household income.	0 - 256,099 Euro	
Self-employed	Dummy	Employment status of the respondent.	1, if the respondent is self-employed.	
Civil servant	Dummy	Employment status of the respondent.	1, if the respondent is a civil servant.	
Pensioner	Dummy	Employment status of the respondent.	1, if the respondent is a pensioner.	
Not employed	Dummy	Employment status of the respondent.	1, if the respondent is not employment.	
Unemployed	Dummy	Employment status of the respondent.	1, if the respondent is unemployed.	
Unemployment experience	Continuous variable	Total experience of unemployment until the survey year (in years).		
No. persons in household	Discrete variable	Number of persons living in the household.	1 - 8	
No. children in household	Discrete variable	Number of children living in the household.	0 - 6	
West Germany	Dummy	Current residence in West Germany.	1, if the respondent currently lives in West Germany.	