European Bank
for Reconstruction and Development

Effect of Income on Trust: Online Appendix

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1 Descriptive statistics

Table 1: Descriptive Statistics

	Year 2008		Year 2009	
	mean	std.dev.	mean	std.dev.
GDP per capita, thousand 2008 rubles per year	190	129	171	122
Trust	0.34	0.10	0.19	0.08
Education	0.151	0.08	0.152	0.08
Homicide rate (per 100 000 citizens)	24.76	12.7	21.77	10.61
Gini	0.39	0.03	0.39	0.02
Age	44.95	2.00	44.87	1.98

Sources: FOM surveys, Rosstat.
Note: All variables are calculated using two repeated observations on cross-section of 66 Russian regions. Individual responses are averaged on the level of location: regional center, urban area, and rural area in a region, therefore there are three observations on *Trust* and *Education* in each region. *Trust* is a share of people respond in that most people can be trusted. *Education* is the share of people with at least unfinished college degree. *Gini* is regional Gini coefficient from official data. *Homicide rate* is number of murders per 1000 people per year. It is calculated on the regional level. *GDP per capita* is nominal annual GDP per capita deflated by regional consumer price index. *Sources:* FOM, Rosstat.

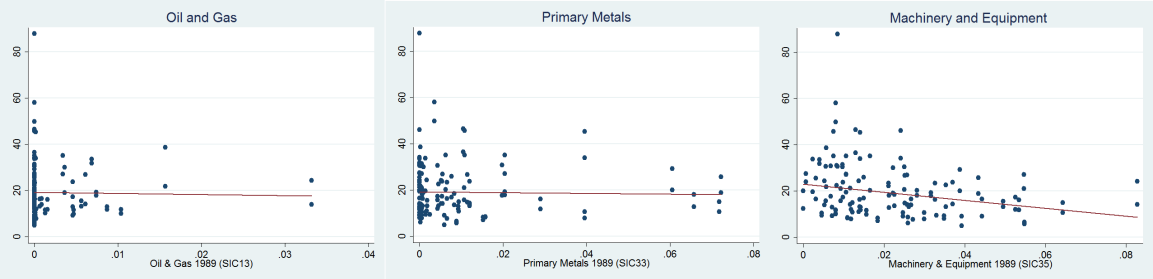
2 Survey data

Table 2: Gender and employment of respondents of the FOM survey

	Year 2008	Year 2009
Gender		
Female	0.566	0.561
Out of the labor force		
Unemployed	0.068	0.109
Retired	0.292	0.281
Housewife	0.038	0.036
Student	0.040	0.032
Sectors of employment		
Manufacturing	0.094	0.087
Agriculture	0.037	0.036
Construction	0.041	0.050
Services	0.065	0.087
Catering	0.014	0.013
Utilities	0.022	0.023
Research	0.010	0.004
Education	0.045	0.045
Healthcare	0.036	0.037
Media	0.021	0.010
Government	0.022	0.015
Military	0.020	0.006
Police	0.029	0.017
Retail	0.040	0.038
Consulting	0.002	0.003
Finance	0.004	0.005
Observations	27960	28991

3 Potential violations of exclusion restrictions

Figure 1: Soviet industrial structure in 1989 and homicide rates in 2008.



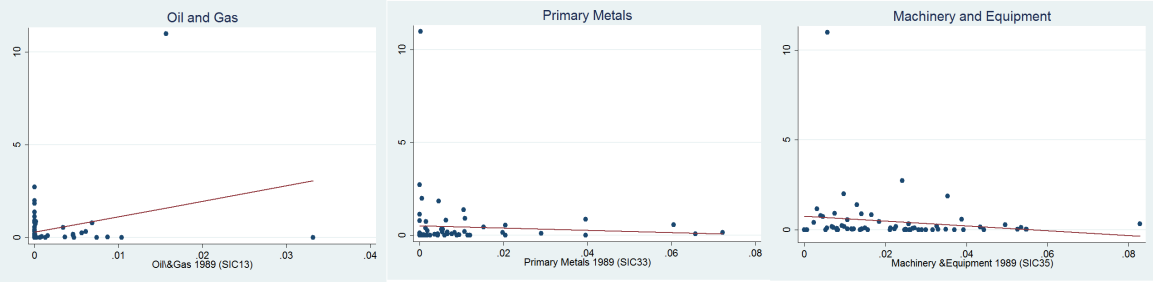
Source: Rosstat.
Note: The horizontal axis shows the share of population employed in a particular sector in 1989. The vertical axis depicts the number of homicides per 10,000 people in 2008.

Figure 1 shows the cross-sectional correlations between the Soviet industrial structure and the levels of crime. For oil and gas, and primary metals we do not see any connection with the level of criminality. Employment in Primary Metals (SIC35) is indeed correlated with the homicide rate, but the correlation is *negative*, meaning that if indeed Soviet industrial structure has an impact on cooperation within the society, then regions with higher vulnerability to crisis (higher levels of employment in Machinery in Equipment) should have more cooperation. If this is true, then the mediation goes in the opposite direction than our theoretical predictions, and if the coefficient in our estimations are still positive and non-trivial in magnitude, then we, if anything, underestimate the true effect.

Another important alternative channel to rule out is historical exposure to traumatic events. Soviet 20th century's history contains a great number of atrocities conducted by the government. The exposure to such atrocities—even the ones that are removed in time from the present day—-might influence how communities react to exogenous shocks in income. In particular, if a region is hit by the crisis, then families with the exposure to repressions might potentially downgrade their assessment of the trustworthiness of others more than the families without such a history.

In order to check whether this is a serious concern for our approach we look at correlations between industrial structure and the number of prisoner-years per capita of GULAG camps located in those regions (Figure 2). We find that the association is largely non-existent (a positive slope for oil and gas employment is driven by one observation and is not statistically significant).

Figure 2: GULAG prisoner-years per capita and 1989 industrial structure



Source: Mikhailova (2012).

Note: The horizontal axis shows the share of population employed in a particular occupation. The vertical axis depicts the number of prisoner-years of GULAG camps in a particular region, divided by 1939 population of that region.

4 Characteristics of compliers

Table 3: Observable Characteristics of Compliers.

	Log GDP per capita	Age	Education	Homicide	Trust
Complier	0.225**	0.323	-0.00797	-4.445*	0.0310
	(0.105)	(0.296)	(0.0131)	(2.230)	(0.0195)
Constant	11.95***	44.76***	0.155***	20.86***	0.325***
	(0.0635)	(0.204)	(0.00848)	(1.769)	(0.00927)
Observations	198	198	198	195	198
R-squared	0.064	0.006	0.002	0.038	0.023

Sources: FOM surveys, Rosstat.
Note: Complier is the dummy for the regions that had lower-than-median *predicted* change in GRP between 2008 and 2009 (i.e. deeper predicted impact of the crisis) and at the same time lower-than-median *actual* change in GRP between 2008 and 2009 (i.e. deeper actual impact of the crisis). Log regional GDP per capita and Homicide rate are taken from Russian State Statistics Agency (Rosstat). Trust, Education and Age are calculated using the survey responses averaged out at the level of location: regional center, non-center urban area, and rural area in a region. Robust standard errors (clustered by 66 regions) in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

5 Industrial structure and levels of trust in the past

Table 4: Soviet industrial structure and levels of trust

	Trust in 2005	Trust in 2008	Trust in 2009
Oil and gas	-0.342	0.319	-1.994**
	(1.717)	(1.468)	(0.831)
Primary metals	0.121	0.936**	-0.446
	(0.366)	(0.462)	(0.421)
Machinery and equipment	-0.0255	0.112	-0.237
	(0.422)	(0.586)	(0.409)
Constant	0.358***	0.324***	0.203***
	(0.0144)	(0.0151)	(0.0152)
Observations	199	198	198
R-squared	0.001	0.028	0.025

Sources: 1989 Soviet Industrial Census, FOM surveys.
Note: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

6 Historical legacies and trust

Table 5: Industrial structure, CPSU members, and level of trust

	Share of CPSU members	Trust in 2005
CPSU members		-0.00112
		(0.00471)
Oil and gas	-21.31**	0.0248
	(8.428)	(0.378)
Machinery and equipment	3.230	-0.0330
	(9.669)	(0.434)
Primary metals	-93.47***	-0.676
	(20.93)	(1.683)
Constant	8.714***	0.371***
	(0.303)	(0.0444)
Observations	186	186
R-squared	0.125	0.001

Sources: FOM surveys, Libman and Obydenkova (2013), 1989 Soviet Industrial Census.
Note: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: CPSU members and GRP Change

	2008-9 Real GRP Change
CPSU members	0.000332
	(0.00648)
Oil and gas	-2.681***
	(0.709)
Primary metals	-1.310**
	(0.589)
Machinery and equipment	-4.274***
	(1.271)
Constant	-0.0374
	(0.0544)
Observations	186
R-squared	0.439

Sources: Libman and Obydenkova (2013), 1989 Soviet Industrial Census, Rosstat.
Note: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Change in trust and CPSU members

	Trust Change	Trust Change
CPSU members	0.00552	0.00213
	(0.00511)	(0.00477)
Predicted income change	0.463***	0.463**
	(0.165)	(0.214)
Predicted income change × CPSU Members		0.0241
		(0.0255)
Homicide change	0.00178	0.00488*
	(0.00293)	(0.00263)
Gini change	0.447	-0.227
	(1.759)	(1.857)
Education change	-0.0761	0.140
	(0.288)	(0.347)
Age change	0.0660	0.0977
	(0.144)	(0.189)
Age squared change	-0.000471	-0.000807
	(0.00159)	(0.00208)
Constant	-0.140**	-0.105*
	(0.0561)	(0.0557)
Observations	186	177
R-squared	0.139	0.137

Sources: FOM surveys, Libman and Obydenkova (2013), 1989 Soviet Industrial Census, Rosstat.
Note: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: GULAG, industrial structure, and trust

	GULAG prisoner-years per capita	Trust in 2005
GULAG prisoner-years per capita		0.00267
		(0.00336)
Primary metals	-0.728	-0.152
	(3.561)	(0.373)
Machinery and equipment	-8.896	0.139
	(5.366)	(0.410)
Oil and gas	77.15	-0.386
	(102.1)	(1.805)
Constant	0.516***	0.354***
	(0.182)	(0.0148)
Observations	189	189
R-squared	0.094	0.003

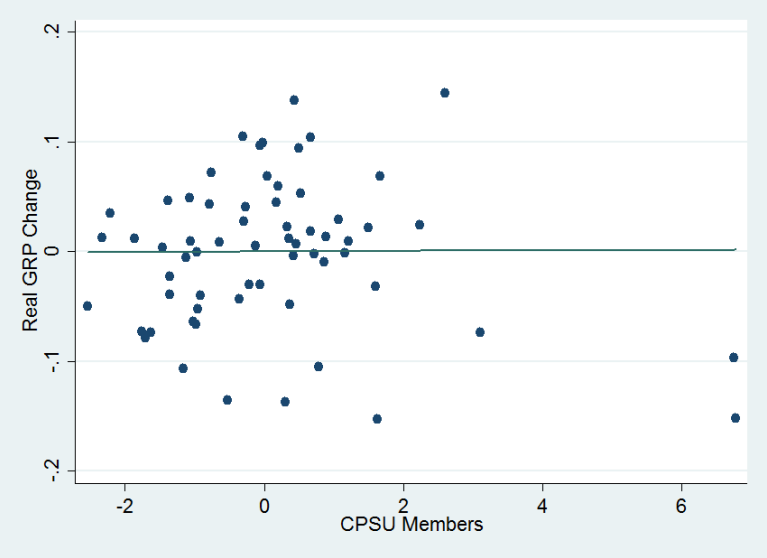
Sources: FOM surveys, Mikhailova (2012), 1989 Soviet Industrial Census.
Note: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: GRP change and GULAG prisoners

	Trust change	Trust change
GULAG prison-years per capita	-0.00156	0.00556
	(0.00233)	(0.0249)
Predicted income change	0.461**	0.443**
	(0.207)	(0.222)
GULAG × Predicted Income Change		0.0711
		(0.241)
Homicide change	0.00340**	0.00365*
	(0.00162)	(0.00194)
Gini change	0.486	0.441
	(1.624)	(1.677)
Education change	0.103	0.104
	(0.338)	(0.342)
Age change	0.0915	0.0936
	(0.182)	(0.182)
Age squared change	-0.000741	-0.000763
	(0.00200)	(0.00200)
Constant	-0.0904***	-0.0918***
	(0.0223)	(0.0236)
Observations	186	186
R-squared	0.128	0.128

Sources: FOM surveys, Rosstat, Mikhailova (2012).
Note: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 3: CPSU members and 2008-9 crisis: Residual plot



Note: Residual plot based on estimation in Table 6.

7 Regressions with a discrete measure of recession

In order to make sure that the results are unlikely to be driven by the measurement error (as is always a risk with difference-in-differences estimation), we re-estimate the main OLS and 2SLS specifications using a discrete measure of recession. Instead of the continuous change in real GDP per capita, we use a categorical variable with 4 values: 1 – for the bottom quartile of change in GDP between 2008 and 2009 (fall in real GDP per capita between 39% and 15%), 2 – for the second-from-the-bottom quartile (fall between 15% and 9%), 3 – for the third-from-the-bottom quartile (fall between 9% and 5%), 4 – for the top quartile (GDP change from -5% to +10%).

The results of the OLS regressions are presented in Table 10. In our preferred specification, the coefficient at the quartile of GDP change is around 0.02 implying that one quartile change is associated with 2 percentage point of change in trust. So, a two-quartile change is associated with 4 percentage point change in trust, while the change from minimal level of GDP change to the maximum level of GDP change is associated with 8 percentage point of change in trust.

Table 11 presents the results of 2SLS estimations where the quartile of change in GDP is instrumented by the Soviet-era industrial structure. As in the previous estimations, we find a statistically significant and large effect of change in GDP on the change in trust. An increase in GDP change by a quartile is associated with 4 percentage points of increase in the change in trust. Therefore a two-quartile change (from the region with 15 percent fall in GDP to 5 percent fall in GDP) is associated with 8 percentage point fall in trust; this is similar to our 2SLS estimates with a continuous measure of change in GDP (where a 10 percent change in GDP is a associated with 5-6 percentage point change in trust.

Table 10: Trust and quartiles of GDP change, OLS estimates.

	(1)	(2)	(3)	(4)	(5)	(6)
Quartile	0.016*	0.015	0.015	0.015*	0.019*	0.021**
	(0.0092)	(0.0093)	(0.0093)	(0.0091)	(0.0094)	(0.0098)
Homicide Change		0.0015	0.0014	0.0013	0.0011	0.00067
		(0.0018)	(0.0017)	(0.0017)	(0.0017)	(0.0017)
Gini Change			1.80	1.88	1.48	2.24
			(1.39)	(1.38)	(1.53)	(1.45)
Education Change				-0.21	-0.094	-0.16
				(0.21)	(0.29)	(0.28)
Age Change					0.049	0.087
					(0.14)	(0.14)
Age Squared					-0.027	-0.067
Change, X100					(0.16)	(0.16)
Observations	198	195	195	195	195	189
R^2	0.024	0.021	0.029	0.033	0.106	0.125

Sources: FOM surveys, Rosstat.

Note: The dependent variable is the change in the share of people who answered that "most people can be trusted" in a particular location between 2008 and 2009. *Quartile* is a quartile of change in log regional GDP per capita. The change in the log regional GDP per capita is taken from Russian State Statistics Agency (Rosstat). Changes in Gini and changes in homicide rate are also taken from Rosstat. Individual characteristics (Education, Age, and Age squared) are calculated using the survey responses averaged out at the level of location: regional center, non-center urban area, and rural area in a region. *Education* is a share of people with at least unfinished college degree. *Homicide rate* is the number of murders and assaults per 100 000 people in a year calculated at the regional level. In column (6), we exclude the faster growing and the fastest falling regions (Sakhalin and Vologda, respectively). Robust standard errors (clustered by 66 regions) in parentheses.

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

Table 11: Trust and quartiles of GDP change, 2SLS estimates, second stage.

	(1)	(2)	(3)	(4)	(5)	(6)
Quartile	0.040***	0.044***	0.041***	0.041***	0.040***	0.047***
	(0.014)	(0.014)	(0.015)	(0.014)	(0.013)	(0.014)
Homicide Change		0.0030	0.0027	0.0026	0.0022	0.0017
		(0.0021)	(0.0020)	(0.0019)	(0.0018)	(0.0018)
Gini Change			1.70	1.80	1.38	2.44
			(1.56)	(1.54)	(1.63)	(1.56)
Education Change				-0.26	-0.13	-0.20
				(0.23)	(0.30)	(0.31)
Age Change					0.031	0.071
					(0.14)	(0.14)
Age Squared					-0.0054	-0.045
Change, X100					(0.15)	(0.16)
Observations	198	195	195	195	195	189
First Stage F-statistic	15.6	16.2	13.3	14.3	16.1	15.2

Sources: FOM surveys, 1989 Soviet Industrial Census, Rosstat.
Note: The dependent variable is the change in the share of people who answered that "most people can be trusted" in a particular location between 2008 and 2009. *Quartile* is a quartile of change in log regional GDP per capita. The change in the log regional GDP per capita is taken from Russian State Statistics Agency (Rosstat). Changes in Gini and changes in homicide rate are also taken from Rosstat. Individual characteristics (Education, Age, and Age squared) are calculated using the survey responses averaged out at the level of location: regional center, non-centre urban area, and rural area in a region. *Education* is a share of people with at least unfinished college degree. *Homicide rate* is the number of murders and assaults per 100 000 people in a year calculated at the regional level. In column (6), we exclude the faster growing and the fastest falling regions (Sakhalin and Vologda, respectively). Robust standard errors (clustered by 66 regions) in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

8 Robustness to outliers

In this section, we explore if our results are driven by influential observations. In this analysis, we employ two popular techniques: leverage-residual plot, and robust regression based on iterative deletion of observations with Cook's distance larger than 1.

In a leverage-residual plot, the "leverage" of an observation is a measure of how far a value of independent variable is from its mean, and the "residual" is the absolute difference between the fitted value of a dependent variable and its actual value. Figure 4 shows the leverage-residual plot for the second-stage estimation of our preferred specification: column 5 in Table 4 of the main text. The plot shows that there are indeed some atypical observations in our sample: in particular, the region 49 has high leverage, and the regions 16 and 23 have high residuals. After we re-estimate the specification without regions 49, 16, and 23, we find, as shown in Figure 5 that other regions emerged as potentially influential (79 and 51). After excluding those observations, another three observations are shown to be of high leverage (38, 48, and 65) in Figure 6. After excluding those, we find another set of potentially influential observation (65, 27, 33, 22, and 35) in Figure 7. Table 12 shows the instrumental variable estimations after cumulatively excluding all the regions with potentially influential observations. The results remain virtually the same as the results in Table 4 in the main text in all but one specification. The only specification when the results are weakened is column (3), where we exclude observations 38, 48, and 65 but leave observations 65, 27, 22, 33, 35. When we exclude all influential observations, the magnitude and the precision of the results remain the same as in Table 4 of the main text.

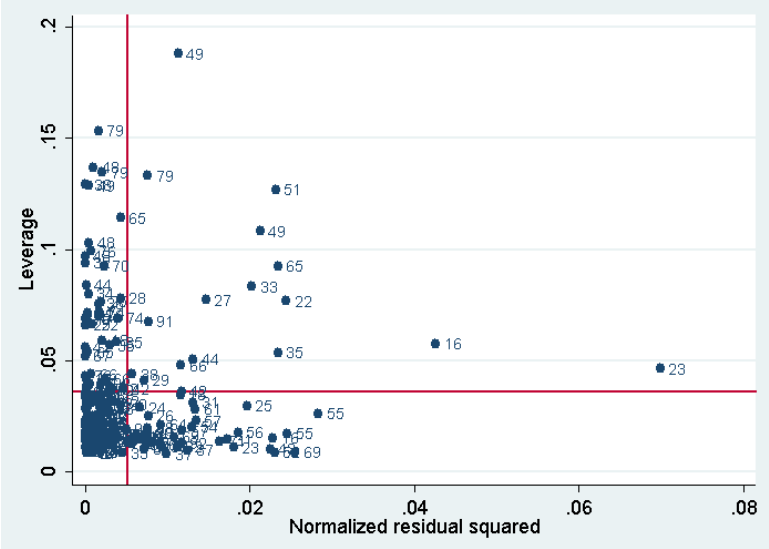
Exploring robustness to outliers using leverage-residual plot has a disadvantage of relying on the subjective decisions about what observations are deemed influential. Another popular tool—robust regression—is based on the automated deletion of observation which have Cook's distance (a statistic that combines leverage and residual[1]) larger than one. Robust regression (*rreg* in *Stata*) implements the estimation of linear regression based on Cook's distance: the procedure iteratively estimates Cook's distance for all observations and then removes the observations with Cook's distance larger than one from the sample. It proceeds until no observation with Cook's distance larger than one are left in the sample.

To explore the sensitivity of our results, we estimate the first stage using a full sample, save predicted values of GDP change, and then estimate a robust regression of a trust change on predicted GDP change with a various set of covariates. Table 13 presents the results. The magnitude of the results in all the samples is the same as in our main table. The estimates of the coefficients are even more precise than in the main table, but this might happen because *rreg* does not allow for clustering of standard errors.

In sum, while some of the observations in our sample appear atypical in either dependent variable or a set of explanatory variables, we find no evidence that our result might be driven by any combination of those atypical observations.

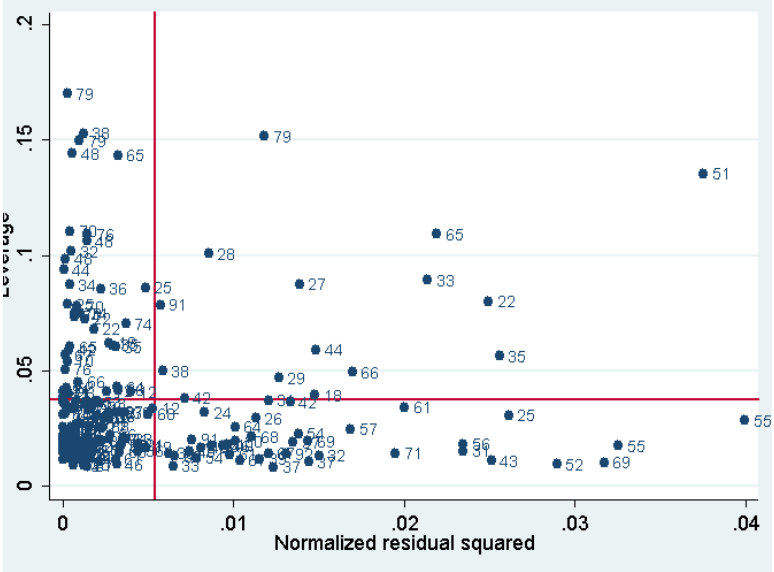
[1]For a definition and description of Cook's distance, see, for example Chatterjee and Hadi (2009)

Figure 4: Leverage-residual plot for second-stage regression, iteration 1



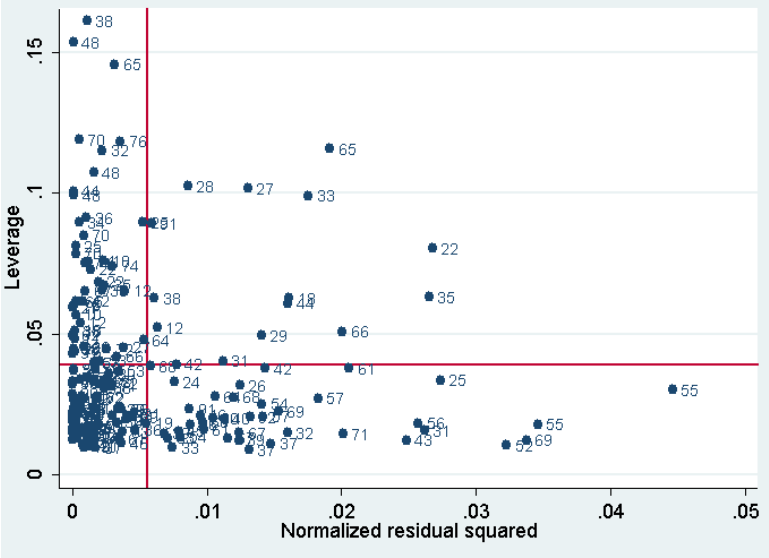
Note: Leverage-residual plot for the regression specification in Column 5 of Table 4 in main text.

Figure 5: Leverage-residual plot for second-stage regression, iteration 2



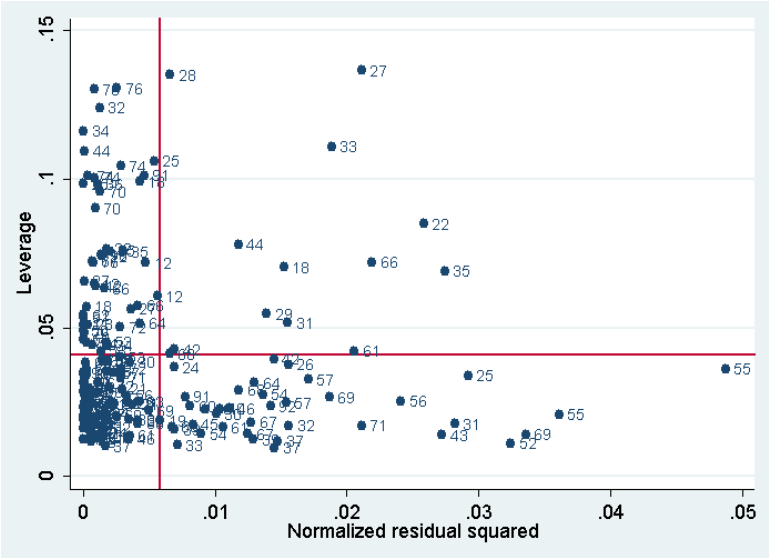
Note: Leverage-residual plot for the regression specification in Column 5 of Table 4 in main text.

Figure 6: Leverage-residual plot for second-stage regression, iteration 3



Note: Leverage-residual plot for the regression specification in Column 5 of of Table 4 in main text.

Figure 7: Leverage-residual plot for second-stage regression, iteration 4



Note: Leverage-residual plot for the regression specification in Column 5 of of Table 4 in main text.

Table 12: GDP and trust: Exclusion of influential observations

	(1)	(2)	(3)	(4)
Real per capita GDP change	0.443**	0.419**	0.356	0.478**
	(0.198)	(0.191)	(0.213)	(0.230)
Homicide change	0.00266	0.00269	0.00286	0.000206
	(0.00174)	(0.00272)	(0.00273)	(0.00292)
Gini change	1.383	1.267	1.196	1.848
	(1.683)	(1.761)	(1.669)	(1.857)
Education change	-0.122	-0.145	0.269	0.336
	(0.338)	(0.326)	(0.265)	(0.258)
Age change	-0.0471	0.0545	0.110	0.0787
	(0.169)	(0.151)	(0.168)	(0.151)
Age squared change	0.000690	-0.000495	-0.00105	-0.000628
	(0.00188)	(0.00165)	(0.00184)	(0.00165)
Constant	-0.0945***	-0.0991***	-0.102***	-0.0973***
	(0.0220)	(0.0216)	(0.0226)	(0.0251)
Exclude regions 49,16,23	Yes	Yes	Yes	Yes
Exclude regions 79, 51	No	Yes	Yes	Yes
Exclude regions 38, 48, 65	No	No	Yes	Yes
Exclude 27, 33, 22, 35	No	No	No	Yes
Observations	186	180	171	156

Note: Real Per Capita GDP change is instrumented by 1989 Primary Metals employment (SIC 33), Machinery and Equipment employment (SIC 35), and Oil and Gas Employment (SIC 13). All specifications, independent variables and sources of data are the same as in Table 4 of the main text. Standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Table 13: GDP and Trust: Robust regression

	(1)	(2)	(3)	(4)	(5)
Predicted change in	0.387***	0.414***	0.428***	0.425***	0.441***
real per capita GRP	(0.129)	(0.134)	(0.134)	(0.132)	(0.134)
Homicide change		0.00184	0.00178	0.00209	0.00197
		(0.00184)	(0.00184)	(0.00181)	(0.00185)
Education change			-0.243	-0.154	-0.102
			(0.208)	(0.206)	(0.211)
Gini change				-0.671***	-0.706***
				(0.191)	(0.197)
Age change					0.0825
					(0.147)
Age squared change					-0.000791
					(0.00164)
Constant	-0.108***	-0.1000***	-0.0979***	-0.103***	-0.102***
	(0.0145)	(0.0168)	(0.0168)	(0.0167)	(0.0170)
Observations	195	195	195	195	195

Note: Real per capita GDP change is instrumented by 1989 Primary Metals employment (SIC 33), Machinery and Equipment employment (SIC 35), and Oil and Gas Employment (SIC 13). First-stage F-statistic for excluded instruments is 10.35. All specifications, independent variables and sources of data are the same as in Table 4 in the main text. Standard errors in parentheses. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$

9 Aggregation at the regional level

In the main specification, our dependent variable— the change in the level of trust—is measured at the subregional level. Our explanatory variable (change in real GDP) and the instrumental variables (shares of different industries according to 1989 Industrial Census) are measured at the regional level. Here, we check whether our results change if we aggregate trust at the regional level. We provide OLS results (Table 14) and the second stage results (Table 15). Our main results are close to the results in Table 4 of the main text: in the second stage, a 10 percent decrease in GDP leads to a 4 percentage point decrease in trust.

Table 14: GDP and trust, aggregated at the regional level, OLS

	(1)	(2)	(3)	(4)
Real per capita GDP change	0.114	0.104	0.102	0.118
	(0.0890)	(0.0894)	(0.0872)	(0.0982)
Homicide change		0.000679	0.000648	0.00144
		(0.00144)	(0.00135)	(0.00150)
Education change			-0.433	-0.195
			(0.276)	(0.284)
Age change				-0.734**
				(0.330)
Age squared change				0.00845**
				(0.00381)
Constant	-0.135***	-0.133***	-0.133***	-0.129***
	(0.0121)	(0.0137)	(0.0135)	(0.0130)
Observations	68	67	67	67
R-squared	0.018	0.015	0.038	0.104

Note: All specifications, independent variables and sources of data are the same as in Table 4 of the main text. Robust standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Table 15: GDP and trust, aggregated at the regional level, instrumental variable estimation

	(1)	(2)	(3)	(4)	(5)
Real per capita GDP change	0.407**	0.434**	0.409**	0.400**	0.393**
	(0.177)	(0.174)	(0.177)	(0.176)	(0.182)
Homicide change		0.00180	0.00159	0.00152	0.00223
		(0.00157)	(0.00151)	(0.00144)	(0.00162)
Gini change			1.185	1.335	0.893
			(1.543)	(1.569)	(1.659)
Education change				-0.436	-0.198
				(0.320)	(0.371)
Age change					-0.729*
					(0.410)
Age squared change					0.00842*
					(0.00470)
Constant	-0.107***	-0.0980***	-0.0995***	-0.0999***	-0.0992***
	(0.0190)	(0.0207)	(0.0209)	(0.0207)	(0.0198)
Observations	68	67	67	67	67

Note: Real Per Capita GDP change is instrumented by 1989 Primary Metals employment (SIC 33), Machinery and Equipment employment (SIC 35), and Oil and Gas Employment (SIC 13). First-stage F-statistic for excluded instruments is 10.35. All specifications, independent variables and sources of data are the same as in Table 4 of the main text. Robust standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

10 Control for the pre-crisis income level

One of the concerns that might be raised is that the Soviet industrial structure influences long-term income levels, and those income levels can have an impact on the change of the levels of trust. Indeed, it is hard to expect that the structure of the regional economy has no effect on the level of income; for example, industrialised regions may be on average richer than the regions with agrarian economies. Nevertheless, we contend that our results are unlikely to be driven by this effect. Table 16 shows our main specification controlling for the pre-crisis level of regional GDP and the pre-crisis economic growth. We find that this change does not alter our results (the estimates remain precise and about 0.5 in magnitude.)

Table 16: GDP and trust: Controlling for pre-crisis Levels and changes

	(1)	(2)	(3)
Real per capita GDP change 08-09	0.528**	0.514**	0.573**
	(0.253)	(0.200)	(0.260)
Log GDP in 2008 (Pre-crisis)	0.0139		0.0170
	(0.0160)		(0.0161)
Real per capita GDP change 07-08		-0.00215	-0.00287
		(0.00394)	(0.00418)
Homicide change	0.00104	0.00226	0.00135
	(0.00202)	(0.00198)	(0.00213)
Gini change	1.224	1.134	1.659
	(2.061)	(1.843)	(2.010)
Education change	-0.148	-0.130	-0.196
	(0.339)	(0.343)	(0.343)
Age change	0.0601	0.0465	0.0588
	(0.145)	(0.139)	(0.143)
Age squared change	-0.000410	-0.000254	-0.000394
	(0.00161)	(0.00154)	(0.00158)
Constant	-0.261	0.138	0.00621
	(0.182)	(0.419)	(0.448)
Observations	195	195	195

Note: Real per capita GDP change is instrumented by 1989 Primary Metals employment (SIC 33), Machinery and Equipment employment (SIC 35), and Oil and Gas Employment (SIC 13). First-stage F-statistic for excluded instruments is 10.35. All specifications, independent variables and sources of data are the same as in Table 4 of the main text. Standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

11 Individual level regressions: Cross-sectional evidence

In this section, we use the FOM data on Russia to estimate cross-sectional individual-level relationship between income and trust. The cross-sectional regressions cannot resolve the endogeneity problem. For example, if a person has high income and high level of trust, it may mean that her level of trust is high because of high income. But the causality may also go in opposite direction: a person has high income because social capital helps to advance her career. Nevertheless, the results of such estimations might be viewed as a suggestive evidence.

Moreover, these results are important for checking whether behaviour of generalised social trust in Russia is similar to the one in other countries. We compare the results to the individual level regressions in Alesina and La Ferrara (2002) (who use the General Social Survey in the US). We find that signs and even magnitudes of coefficients of respondents of the FOM survey in Russia are generally similar to those found by Alesina and La Ferrara (2002). This further suggests that our data on trust are comparable to those in other countries and that our results are not likely to be driven by certain Russia-specific factors.

We estimate probit regressions separately for 2008 and 2009 cross-sections. The dependent variable is 1 if the respondent says that "most people can be trusted" and is 0 if they say that "one cannot be too careful dealing with other people". We also include age, age squared, gender, income, and education. For income, we use self-reported income data. The survey asks whether the household's per capita monthly income is in one of 16 broad categories.[2]

The 2009 survey also included questions on the respondents' employment status and occupation (if employed). The descriptive statistics of the employment status and occupational dummies are reported in Table 2. In order to make 2009 results comparable to those of 2008, we run the estimations for 2009 both with and without employment status and occupational dummies.

The results are presented in Table 17. We report marginal effects. In regressions (1), (3), (5) we include regional dummies and control for the type of the subregion (rural, urban or regional center, with the latter being the omitted category).[3] In regressions (2), (4), (6) we include subregional dummies.

In all specifications trust is positively correlated with personal income. 10% increase in personal income is associated with 0.8 percentage points increase in a probability of a person trusting others in 2009 survey. In 2008 survey, the effect is twice is large. In Alesina and La Ferrara (2002) the coefficient is similar in magnitude to the one we find in 2009 data: in their regressions a 10% change in income is associated with 0.6 percentage points increase in trust.

[2]The respondents are asked whether their income is below or above the following fifteen thresholds: 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 25, 30, 45 thousand roubles. In 2008-2009, a thousand roubles was about 30 US dollars. These categories are too broad to use these data for change in income over time so we only use these data for the cross-sectional analysis.

[3]We have also run the estimations with median income, median income squared and Gini index calculated at the subregional level. The coefficients at the individual characteristics did not change.

Table 17: Individual cross-section regressions, probit.

	Dependent variable=1 if the respondent trusts others					
	Year 2008		Year 2009		Year 2009	
Log personal income	0.17***	0.16***	0.085***	0.079***	0.079***	0.073***
	(0.014)	(0.014)	(0.016)	(0.017)	(0.016)	(0.018)
Female	0.059***	0.058***	0.016	0.0099	0.015	0.0088
	(0.017)	(0.017)	(0.018)	(0.019)	(0.018)	(0.019)
Age, x100	0.43	0.43	0.87***	1.04***	0.88***	1.09***
	(0.27)	(0.28)	(0.30)	(0.33)	(0.31)	(0.34)
Age squared, x10000	-0.38	-0.38	-0.46	-0.45	-0.46	-0.48
	(0.28)	(0.28)	(0.31)	(0.35)	(0.31)	(0.36)
Education	0.13***	0.14***	0.15***	0.14***	0.16***	0.14***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.023)
Housewife				0.022		0.021
				(0.063)		(0.064)
Unemployed				0.017		0.0096
				(0.045)		(0.046)
Student				0.25***		0.25***
				(0.064)		(0.065)
Retired				-0.035		-0.041
				(0.044)		(0.045)
Rural	-0.0035		0.10***	0.098***		
	(0.034)		(0.033)	(0.033)		
Urban	-0.066*		0.070**	0.067**		
	(0.036)		(0.033)	(0.033)		
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes
Subregional dummies	No	Yes	No	No	Yes	Yes
Occupational dummies	No	No	No	Yes	No	Yes
Observations	29102	29102	28991	28991	28991	28991

Source: FOM surveys.
Note: Marginal effects are reported. Education equals 1 if the respondent has higher education. Coefficients at Age and Age Squared are multiplied by 100 and 10,000, respectively. Robust standard errors (clustered by 198 subregions) in parentheses: *** p<0.01, ** p<0.05, * p<0.1

We also find a positive correlation between trust and education. Higher education is associated with 13-16 percentage point increase in trust. This effect is also similar to the one found in

Alesina and La Ferrara (2002): there having less than 12 years of education is associated with 13 percentage point lower trust and having more than 16 years of education is associated with 18 percentage point higher trust than for having 12-16 years of education. In Russia, having more than 16 years of education is equivalent to having post-masters degrees and is therefore very rare; thus the main comparison in our sample is between those having less than 12 years (secondary but no higher education) and having 12-16 years (higher education but no post-graduate degrees).

12 Recovery of trust controlling for the depth of the recession

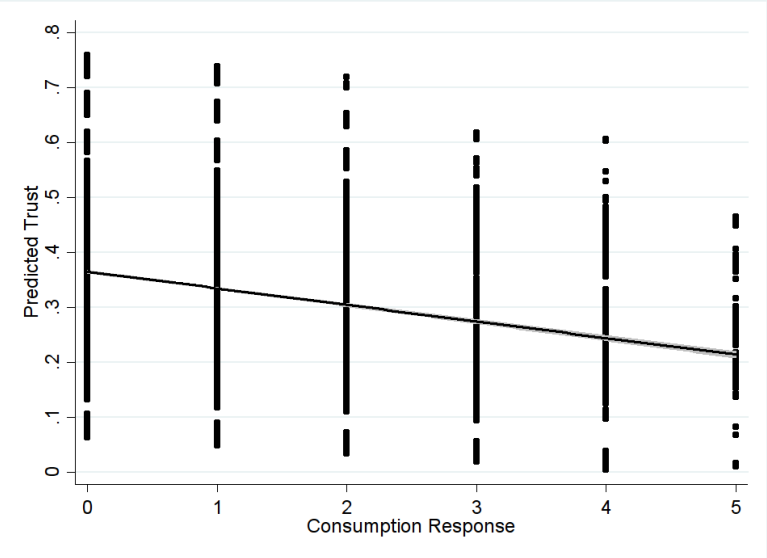
Table 18: Recovery of trust controlling for the depth of the recession

	(1)	(2)	(3)	(4)	(5)	(6)
Trust Change 08-09	0.028	-0.0024	-0.56***	-0.59***	-0.28**	-0.24**
	(0.15)	(0.16)	(0.19)	(0.19)	(0.11)	(0.10)
Real GDP change 09-14	0.12***	0.16***	0.47***	0.27	0.13*	0.17**
	(0.044)	(0.044)	(0.18)	(0.21)	(0.069)	(0.064)
Real GDP Change 08-09	-0.11	-0.13	-0.51**	-0.40**	-0.29*	-0.25*
	(0.16)	(0.14)	(0.23)	(0.19)	(0.15)	(0.13)
Gini Change 09-14		-0.44		-0.093		-0.37
		(0.29)		(0.26)		(0.23)
Education Change 09-14		-0.025		0.65***		0.31**
		(0.16)		(0.20)		(0.14)
Observations	97	97	98	98	195	195
R^2	0.059	0.095	0.212	0.320	0.132	0.194

Note: All specifications, independent variables and sources of data are the same as in Table 12 in the main text. Standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

13 Predicted trust and consumption response

Figure 8: Predicted Trust and Consumption Response



Source: Life in Transition Survey 2010.

14 Using full soviet sectoral structure as instruments

In our main specification, we use three share of the industries: Oil and Gas (SIC 13), Primary Metals (SIC 33), Machinery and Equipment (SIC 35). It is important for our argument that the validity of our instrument is derived not only from the temporal precedence of year 1989 (year of the industrial census that we are using) and the year 2008, but also from the basic macroeconomic reasoning that predicts high sensitivity of investment to the business cycle. The industries we select for the instrumental variables estimations are the ones that ex-ante appear the most vulnerable to the drop in aggregate investment. In general, we do not expect shares of *all* industries to identify the effect of income on trust.

To illustrate this point, we re-estimate our preferred specification (Table 4 in the main tex, Column (5): 2SLS with the full set of controls) using all 26 industrial shares that are available in our dataset. Table 19 presents first stage results, and Table 20 presents second stage results. It is important to notice that the second stage results do not match the results in Table 4 in the main text: the point estimate of the coefficient on real GDP change is smaller in magnitude and less precise. To explore whether the instruments are collectively valid, we calculate Wooldridge's robust score (*estat postid* after *ivregress 2sls* in *Stata*)[4]. As one might see, the the p-value of Wooldridge's score is 0.02, so the null hypothesis that the instruments are valid is rejected. In contrast, for our main specification with three instruments, the p-value of Wooldridge's score is never lower than 0.7, so the null hypothesis that the instruments are valid is never rejected.

Therefore, even though our results are weakened if we use all shares as instruments, our analysis suggests that this procedure is unlikely to deliver valid results, given the lack of theoretical foundations and the statistical problems that it entails.

[4]We prefer this statistic to Sargan's score and Basmann's score since those require errors to be i.i.d., while Wooldridge's score is robust to heteroscedasticity.

Table 19: Income and trust with full soviet sectoral structure as instruments: First stage

	(1)
Dep. Var:	Real GDP change
sic 1-7	-45.62**
	(21.42)
sic 8	15.05
	(12.73)
sic 9	-4.206
	(2.572)
sic 10	1.558
	(3.392)
sic 13	-6.491***
	(1.399)
sic 14	0.0592
	(3.844)
sic 20	3.551***
	(0.817)
sic 21	53.28
	(46.39)
sic 22	0.254
	(0.919)
sic 23	0.206
	(7.153)
sic 24	0.769
	(1.692)
sic 25	11.19
	(9.081)
sic 26	1.305
	(3.643)
sic 27	12.94
	(23.34)
sic 28	-6.045***
	(1.903)
sic 29	-9.058
	(5.431)
sic 30	3.889
	(3.476)
sic 31	0.885
	(6.602)
sic 32	4.554**
	(2.243)
sic 33	-6.029***
	(1.439)
sic 35	-2.260*
	(1.142)
sic 37	-0.690
	(0.768)
sic 38	3.237*
	(1.842)
sic 39	-11.25
	(6.919)
sic 49	17.60***
	(5.732)
sic 34	4.149
	(2.732)
Gini change	0.172
	(0.106)
Education change	-0.0230
	(0.108)
Homicide change	0.00140
	(0.00105)
Age change	0.0146
	(0.0615)
Age squared change	-0.000180
	(0.000674)
Constant	-0.167***
	(0.0346)
Observations	195
F-stat	17.19
R-squared	0.705

Sources: FOM surveys, 1989 Soviet Industrial Census, Rosstat.
Note: Robust standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

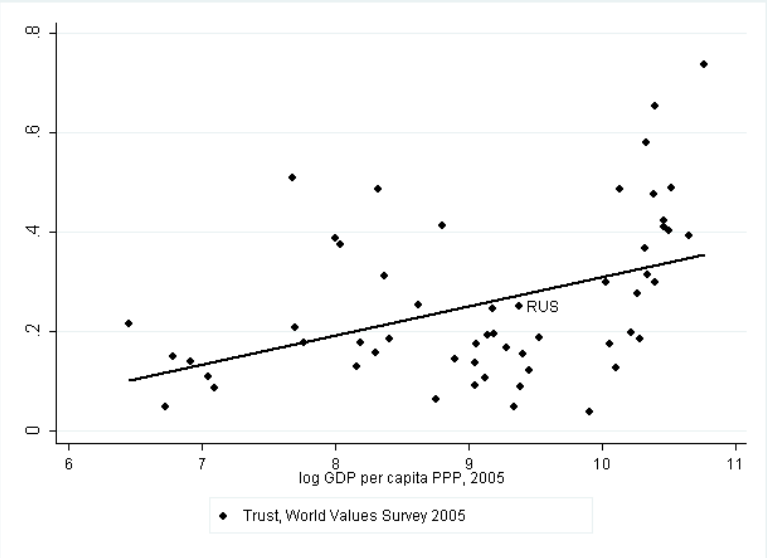
Table 20: Income and trust with full soviet sectoral structure as instruments: Second stage

Real GDP change	0.107
	(0.0950)
Gini change	-0.820***
	(0.251)
Education change	-0.0286
	(0.196)
Homicide change	-0.000299
	(0.00199)
Age change	0.0956
	(0.160)
Age squared change	-0.000841
	(0.00181)
Constant	-0.142***
	(0.0122)
Observations	195
Wooldridge's χ^2	40.78 (p=0.02)

Sources: FOM surveys, 1989 Soviet Industrial Census, Rosstat.
Note: The dependent variable is the change in trust from 2008 to 2009. Real per capita GDP change is instrumented by 26 variables each measuring 1989 employment share in a particular industry. Robust standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

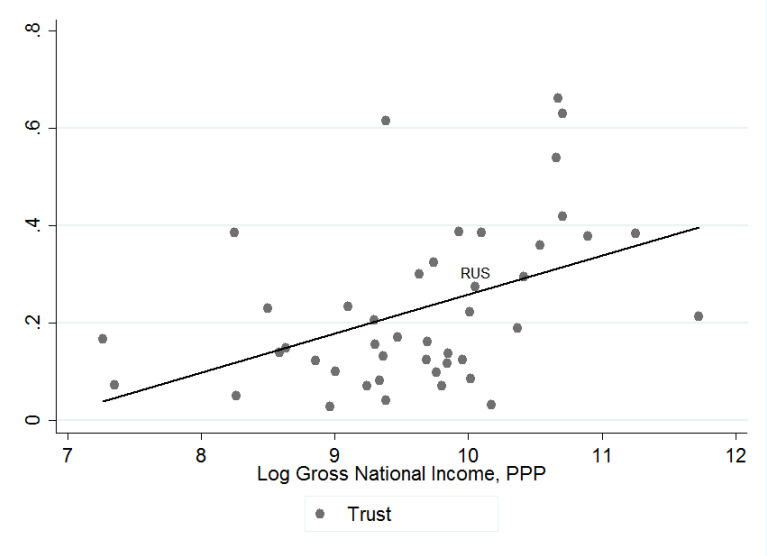
15 Cross-national comparison

Figure 9: Trust and income: Cross-national comparison in 2005



Source: World Values Survey Wave 5, World Bank; GDP per capita for year 2005

Figure 10: Trust and income: Cross-national comparison in 2013



Source: World Values Survey Wave 6, World Bank; GNI per capita for year 2013

16 Why trust matters

Table 21: Individual logit regressions with regional fixed effects, 2007

Dependent variable	Help non-family	Volunteer work	Make donations	Participate in NGO work
Trust	0.12***	0.12***	0.063**	0.13***
	(0.037)	(0.025)	(0.029)	(0.035)
Female	0.35***	0.23***	0.30***	-0.084***
	(0.024)	(0.026)	(0.035)	(0.029)
Education	0.43***	0.21***	0.20***	0.086*
	(0.039)	(0.034)	(0.037)	(0.046)
Poor	-0.29***	-0.080**	-0.22***	0.15***
	(0.044)	(0.032)	(0.043)	(0.052)
Age	0.065***	0.068***	0.047***	-0.015***
	(0.0040)	(0.0059)	(0.0052)	(0.0037)
Age squared	-0.00079***	-0.00075***	-0.00056***	0.00022***
	(0.000040)	(0.000066)	(0.000049)	(0.000043)
Observations	34007	34014	34021	34019

Sources: FOM surveys.
Note: Robust standard errors (clustered by regions) in parentheses: *** p<0.01, ** p<0.05, * p<0.1

17 Crisis and Trust in Government

Economic performance can have implications not only for the generalised social trust but also for the trust in public institutions (Stevenson and Wolfers (2011)). Unfortunately, FOM's Geo-Rating survey lacks consistent questions on the trust in public institutions; it also lacks questions where the word "trust" and any of government officials appear in the same sentence. The closest question to the trust in government is the question about approval of Russian then-prime-minister Vladimir Putin. We find no connection in regional variation in the changes of Putin's approval rating and economic crisis. This may seem puzzling since other authors document significant correlation between incumbent's popularity and economic conditions both in hybrid regimes and democracies (Monroe (1978), Colton and Hale (2009), Treisman (2011)).

One potential explanation for this effect would be related to the effectiveness of the anti-crisis policies that mitigated the impact of the crisis on government's popularity.[5] However, in our case, the relief efforts started after the first quarter of 2009 (when our survey on trust was administered). A more plausible explanation is that during the crisis, the government stepped up propaganda efforts to convince the Russian households that the crisis was driven by external factors and has nothing to do with the government's performance. We leave a more systematic analysis of this phenomenon to future research.

We have also checked whether the change in trust was accompanied with the change in the size of the informal sector. Using the Russian Statistics Agency's data on the share of employment in the informal sector we also found no relationship.

[5]Lazarev et al. (2014) find that in the Russian villages that suffered from 2010 forest fires the support for the government *increased* substantially. They explain this increased support as the perception of the effectiveness of the government's relief efforts.

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