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Does social distrust always lead to stronger support for government intervention?

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Does social distrust always lead to a stronger support for government intervention?

Abstract

We address empirically trust as a determinant of support for government intervention. The central notion provided in the present paper is that the influence of generalized social trust on intervention attitudes is conditional on the perceived reliability, honesty, and incorruptibility of state actors and of major companies. Starting point is an idea by Aghion, Algan, Cahuc, and Shleifer (2010) that individuals who generally distrust others have a stronger taste for a regulation of economic activities, while people with high interpersonal trust are in favor of less strict regulations and state control. This line of argumentation neglects that (lack of) trust spills over to distrust in both governmental as well as in private institutions. People who tend to (dis-)trust other unknown people also tend to (dis-)trust state actors and private sector actors. Estimating the determinants of interventionist preferences with data from the World Values Survey/European Values Study for approximately 100,000 -115,000 individuals in 37 OECD- and EU-countries, we show that the impact of social trust on government intervention attitudes is conditional on individual confidence in state actors and in companies.

JEL codes: D70, D78, H10

Keywords: social trust, institutional trust, government regulation, preference formation

1 Introduction

How do social norms, moral values, or ideologies impact on personal and collective attitudes towards government intervention? One important and widely used concept of such cultural traits is "generalized", "interpersonal", or "social" trust (e.g. Bjørnskov, 2007; Nannestad, 2008).[1] While there is a broad scholarly consensus that interpersonal trust promotes economic growth and development (e.g. Greif, 1994; Knack and Keefer, 1997; Zak and Knack, 2001; Bjørnskov, 2012; Algan and Cahuc, 2013)[2], and is conducive to subjective life satisfaction (Bjørnskov, 2003; Helliwell, 2006; Helliwell and Wang, 2011), its impact on economic policy preferences is however still under-researched and leaves important questions unanswered.

Some scholars have recently addressed explicitly the relationship between social trust and interventionist attitudes. Aghion, Algan, Cahuc, and Shleifer (2010) explore the role of trust for economic regulation. They argue that individuals who distrust others have a stronger taste for government regulation of economic activities, while people with high interpersonal trust are in favor of less strict regulations and state control. Moreover, trust and regulation are mutually interdependent and co-evolve to either a high trust-little regulation or a low trust-intense regulation equilibrium. Bergh and Bjørnskov (2011), and Bjørnskov and Svendsen (2013), contend that societies with a high share of trusting people are better equipped to run and maintain an encompassing high-tax welfare state, as trust reduces the cost of government service provision and the cost of monitoring opportunistic behavior of both welfare beneficiaries and administration.

Stylized facts are consistent with the view that regulation intensity and generalized trust are negatively related. Country means of interpersonal trust and of a summary index of economic deregulation over the decade 2000 to 2009 have a strong and positive correlation in a sample of developed OECD and EU Member States. Countries with a higher trust level also experience freer goods and factor markets with less governmentally imposed restrictions for entry and voluntary exchange, as illustrated in Figure 1. Provided that policies reflect voter preferences, this is also in line with the idea that distrust produces a higher demand for regulation.

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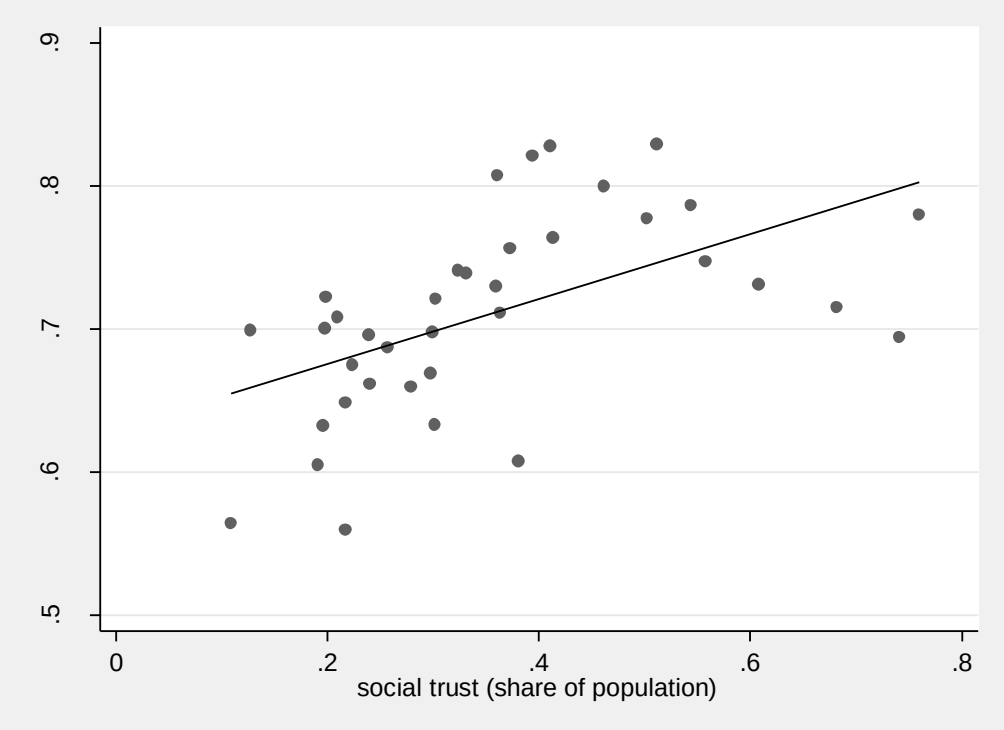
[1] We also use the three terms interchangeably.

[2] Evidence on positive growth effects of social trust is somehow weakened by work from Beugelsdijk, de Groot and van Schaik (2002) and Berggren, Elinder and Jordahl (2008). Employing a fixed effects panel estimation, Roth (2009) even finds growth to be negatively related to an increase of interpersonal trust.

Figure 1: Deregulation and generalized trust



Note: The sample consists of 37 developed countries and shows country means over 2000-2009. Social trust is measured by a survey question from various survey waves of the World Values Survey and the European Values Study: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" The share of people who respond "most people can be trusted" in contrast to "can't be too careful" defines the country mean of trust. Economic deregulation is measured by the Economic Freedom of the World regulation sub-index (Gwartney, Lawson, and Hall, 2012). The EFW deregulation index summarizes several measures for labor market, credit market and business regulation from various sources. The index was re-scaled to a 0-1 scale where smaller values indicate stricter regulations.

While generalized trust refers to everyday interactions among people who do not know each other (Bjørnskov, 2007: 2) and therefore covers horizontal social relationships, institutional confidence is related more specifically to vertical trust in certain organizations and actors. The concept of institutional confidence can be applied to the competence of government officials that choose and implement policies (Algan, Cahuc, and Sangnier, 2011; Rothstein, Samanni, and Teorell, 2011), but also to the trustworthiness of private companies as actors on private markets. Principally, a higher service quality of certain organizations is expected to increase confidence in providing institutions. However, with only a few exceptions (Algan, Cahuc, and Sangnier, 2011; Dimitrova-Grajzl, Grajzl, and Guse, 2012; Svallfors, 2012) a possible interrelation of generalized trust with the perceived quality of public service provision or with confidence in government institutions or private companies is not explicitly taken into account as a driving factor for preference formation.

The paper therefore addresses the impact of interpersonal trust for the support of government intervention, and examines the interrelation of social trust with confidence in the state sector in

comparison to confidence in major companies. For this purpose we use survey data from the World Values Survey/European Values Study as well as different indicators for and measures of governance quality for a sample of around 120,000 individuals in 37 developed OECD and EU Member States over the time period 1990 to 2008. Since cross-country information of the relationship between interventionist attitudes and trust levels are difficult to interpret causally, we investigate individual level data in combination with national level data.

In the paper we follow a comprehensive concept of government intervention. The idea is not to derive 'demand factors' for specific state functions (say, provisions for health care, disability, unemployment, or old age), but to assess the impact of several forms of trust on a broader view of the public on the appropriate role of the state. Section 2 briefly describes the ideas and the related literature. Section 3 proceeds with a description of data and empirical approach. Section 4 presents the results of our empirical exercise, and in section 5 robustness tests are performed. Finally, section 6 summarizes and concludes.

2 Distrust as a driver of interventionist preferences

In traditional economic thinking, individual preferences for or against government action are determined by pure self-interest. Calculating the personal costs and benefits of interventions, well-informed citizens arrive at a personal opinion with respect to different policy measures and vote accordingly in democratic elections. This rather simplistic view of individual attitude formation has been challenged from various perspectives, and recent theoretical and empirical studies report that attitudes are also driven by ideologically framed judgments and beliefs, although existing empirical evidence points out that these cannot always be separated clearly (see, e.g., Pitlik, Schwarz, Bechter, and Brandl, 2011).

Over the last decades research on public opinion formation has been flourishing, and a growing number of contributions focus especially on determinants of attitudes toward economic inequality and redistribution. A major result is that preferences certainly depend on personal self-interest, but evidence reveals that the taste for redistribution is also shaped by cultural norms, conventions, values, ideologies, or personal traits (e.g., Feldman and Steenbergen, 2001; Fong, 2001; Corneo and Grüner, 2002; Bénabou and Tirole, 2006; Alesina and Giuliano, 2009; Dallinger, 2010; Luttmer and Singhal, 2011; Reeskens, Meueleman, and van Oorschot, 2012; Jaeger, 2013; Margalit, 2013).

Another smaller segment of that literature puts its focus more on the formation of individual preferences for economic regulation and government intervention in general. In a broader sense, opinions may serve as measures of preferences for capitalism vs. socialism (Bjørnskov and Paldam, 2012). In that respect, a handful of papers address the relationship between several facets of trust and interventionist attitudes more or less directly.

For example, Di Tella and MacCulloch (2009) advocate the "unpleasant capitalist" hypothesis. According to this perspective, "... people reject capitalism because it favors a set of individuals whom they do not like. Although they understand that capitalism would make them better off economically, they would rather introduce regulations and taxes that punish a group of people whom they consider 'bad' (Di Tella and MacCulloch, 2009: 294). Such hostility against the capitalist elite especially in poorer regions of the world may be well-grounded in a country's corruption experience, as the wealthy elite are assumed to be the profiteers from favoritism. Corruption and inefficient government may lead to a higher demand for interventionism as a consequence of reduced trust in a group of private business actors. Generalized trust, however, does not play an explicit role in their model.

Landier, Thesmar and Thoenig (2008) investigate individual and institutional determinants of pro- or contra-capitalism attitudes, and claim that the link between individual preferences and characteristics (such as age or education) will be depend on institutional background and historical experience. The authors find that people's attitudes toward interventionist policies are influenced by pure self-interest, but to an even larger degree by ideological convictions which have been learned and shaped by national history. People who have experienced a socialist education or training "... tend to underestimate the benefits of free market" (Landier, Thesmar and Thoenig, 2008: 469). Landier, Thesmar and Thoenig also report that generalized trust does not show a robust and stable relationship to measures of government intervention attitudes. However, they do not take into account that personal experience, subjective or experts' perceptions of government efficiency will probably impact on the trust-preference-relationship.

In a theoretical model, Aghion, Algan, Cahuc, and Shleifer (2010) derive existence of multiple equilibria in the trust-intervention preferences relationship: a bad equilibrium characterized by low trust and intense regulation, and a good equilibrium with high trust and low regulation density. In a nutshell, the basic idea is that the initial distribution of trustworthy and untrustworthy people matters. A high share of people in society with opportunistic ('uncivic') behavior causes interpersonal trust to fall and the anticipated negative externalities of market activities to increase. In low-trust societies the damage that is caused by under-regulated entrepreneurs is potentially very high. Expected disutility from externalities increases with

distrust. Accordingly, people who tend not to trust others engage less in market activities, and demand intense regulation, even though public officials are also expected to be inefficient: A corrupt government may be bad, but – similar to Di Tella and MacCulloch - unregulated business may be even worse (Aghion et al., 2010: 1028). One implication of the model is that regulation and social trust are mutually interdependent and co-evolve: In an uncivic society, regulation is also implemented by uncivic (corrupt) governments, which in turn confirms high corruption expectations of people and thereby leads to reduced interpersonal trust. Contrarily, in a society consisting of many trustworthy people, civicness is also rewarded. People expect fewer negative externalities and demand less government intervention, which also leads to fewer corruption. As a consequence, people become more civic and trustful. Hence, we observe a self-confirmatory evolutionary process to one of two possible equilibria.[3] Relying on attitude measures primarily from World Values Survey/European Value Study (WVS/EVS), the authors find evidence that distrust is positively related to political support for regulation. Yet, the idea that a high level of distrust does not prevent people from demanding more detailed regulation if government is inefficiently run and corrupt, is tested only indirectly and only for a sub-sample of transition economies.

By a complementary logic, Bergh and Bjørnskov (2011) and Bjørnskov and Svendsen (2013) consider three mechanisms relating a country's average trust level to welfare state size. They claim that social trust and trustworthiness are (i) supportive to restrain excessive free riding and cheating on welfare state services, keeping benefit morale high, (ii) reduce an erosion of tax morale in high tax countries, and (iii) help controlling and containing large bureaucracies. As it effects on trustworthiness of the bureaucracy, generalized trust also enables less-detailed regulations, potentially resulting in a more efficient private sector. Bjørnskov and Svendsen (2013) explicitly mention that a higher level of social trust will increase political confidence and thus additionally contribute to welfare state stability.

Summing up so far, these papers contend that people conclude from a lack of generalized trust that business actors cannot be trusted, too. Even if social distrust also gives cause for some concern as regards government actors, the effect of distrust appears to matter more for private businesses. Glaeser and Shleifer (2003: 420) however note that "[w]hen the administrative

[3] In a similar spirit, Carlin, Dorobantu, and Viswanathan (2009) derive a theoretical model of the relationship between trust and financial market regulation. They also arrive at two types of equilibria, one in which government regulation is a strict substitute for public trust but may contain growth, and one in which regulation may be supportive of growth and development because intervention complements public trust.

capacity of the government is severely limited, and both its judges and regulators are vulnerable to pressure and corruption, it might be better to accept the existing market failures and externalities than to deal with them through either the administrative or the judicial process." According to this view, individual preferences and the 'taste' for interventions are supposed to depend on the relative differential between personal trust in government (and in judicial) actors, and in private market actors, e.g. entrepreneurs. Hence, horizontal trust among citizens as well as vertical trust relations between citizens and government actors matter for preference formation.

A higher level of social trust may then have several opposing effects on attitudes toward state intervention. On the one hand, higher social trust reduces requirements for economic regulation as it goes hand in hand with an increased confidence in civicness of anonymous private market actors. On the other hand, interpersonal trust also contributes to higher confidence in government actors, and this should ceteris paribus be associated with stronger preferences for government action. The impact of generalized trust on regulation preferences may thus be conditional on the relative confidence in private companies and governmental institutions. When generalized social trust does not spill over to government actors and business actors symmetrically, demand for government regulation supposedly depends on relative trust/confidence in companies vs. trust/confidence state. Against this background we can formulate our main *Hypothesis:*

Social trust is associated with preferences for less intensive government intervention only if confidence in government actors is smaller than confidence in business actors.

Two recent papers are closely related to these ideas. Svallfors (2012) claims that the willingness to delegate important responsibilities for income equalization and provision of certain services to politicians and bureaucrats probably depends on the perceived problem-solving capacity of the government. Using data for 29 European countries from the European Social Survey Welfare State module, conducted in 2008, Svallfors finds that the quality of government has a significant impact on public opinion about taxes and spending. People who perceive government institutions as efficient and fair have a more positive attitude toward both higher taxes and higher government expenditures. The effect of egalitarian preferences on personal attitudes toward tax and spending increases in general are conditional on the perceived efficiency of government. Dimitrova-Grajzl, Grajzl and Guse (2012) also argue that generalized trust reflects individual beliefs about whether people act opportunistic in social and economic relations. Demand for regulation is both driven by individual trust in market participants and by concerns for government failure. Their empirical analysis confirms the notion that trust has a negative

effect on the demand for regulation. Perceived corruption, however, affects demand for regulation only via a negative interaction effect with social trust. Their empirical exercise is however limited to post-socialist countries, and the authors also do not account for the relative effects of confidence in government and confidence in business actors. Menyashev (2011) reports evidence for a sample of 5,100 survey respondents in Russia, that civic engagement as measured by individual participation citizen initiatives, has a strong negative relationship to preferences for regulatory interference by the state. However, if the perceived quality of the bureaucracy is high, the negative effects of higher social capital on intervention preferences are mitigated.

3 Data, measurement and model

3.1 Measuring government intervention attitudes

Measuring political attitudes has been a subject of many public opinion surveys with different country and time coverage. As we aim to examine universal interventionist attitudes, we focus on general preferences toward the appropriate role of government. We restrict the sample to observations from 37 developed OECD- and EU-Member States (see Appendix), and employ three distinct survey questions from the World Values Survey and the European Values Study, starting with the 3rd survey wave in 1989/90:[4]

- *state ownership*: "Private ownership of business should be increased vs. Government ownership of business should be increased."
- *government responsibility*: "People should take more responsibility to provide for themselves vs. The government should take more responsibility to ensure that everyone is provided for."
- *competition attitude*: "Competition is good. It stimulates people to work hard and develop new ideas vs. Competition is harmful. It brings out the worst in people."

We re-coded the responses to a scale running from 0 to 1, such that stronger preferences for government involvement receive higher scores. Spearman's rank order correlations reveal for a total of 142,171 observations that all attitude measures are positively correlated at a 1%-level of significance. Coefficients between +0.2 and +0.32 in such a large sample are supportive of the

[4] The basic attitude question is formulated as "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between." All items were polled for the first time in 1989/90.

idea that the three variables capture similar dimensions. Against this background and to make the following analyses more tractable, we calculated the first principal component of the three measures to come up with a single variable *government intervention*.[5] The newly created variable is normalized to a 0-1 scale, higher scores indicating stronger intervention preferences.

3.2 Measuring generalized and institutional trust

To test our hypotheses, we further consider core beliefs on interpersonal and institutional trust for which data are provided by WVS/EVS.

(1) social trust

The related survey question is formulated as "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" The two response categories are "most people can be trusted" and "can't be too careful". An answer that "most people can be trusted" gets assigned a value '1', and '0' otherwise. The variable can be interpreted as general expectation about the behavior of other people, or as an indicator of moral values and trustworthiness (Tabellini, 2008: 261)

(2) trust in state actors

Following Rothstein and Teorell (2008), governance quality is best described as "impartiality of institutions that exercise government authority". Alternative approaches to assess governance quality use a large variety of different measures, ranging from corruption indices, indicators for speed and reliability of public administration, to measures for government effectiveness and regulatory quality. In that respect, many indicators based on 'objective' expert judgments for average governance quality certainly do a good job. However, individual perceptions of public sector quality may still differ from expert judgments, depending for example on personal experience. As we use individual level data in our empirical strategy, we also prefer to employ individual perceptions of governance quality, too.

An obvious candidate is survey data on confidence in state institutions. The WVS/EVS dataset contains a standard confidence question that reads "I am going to name a number of organisations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?" Our

[5] Factor scores are: government responsibility (0.44), state ownership (0.51), competition attitude (0.47).

variable *trust in state actors* is calculated as the mean of WVS/EVS variables measuring personal confidence in the civil services, the justice system, the government, and the parliament.[6] Suitability of such confidence indicators for an overall assessment of the quality of the public administration is controversially debated (e.g. Newton and Norris, 2000; Bouckaert and van de Walle, 2003; Christensen and Laegreid, 2005; van de Walle, 2007).

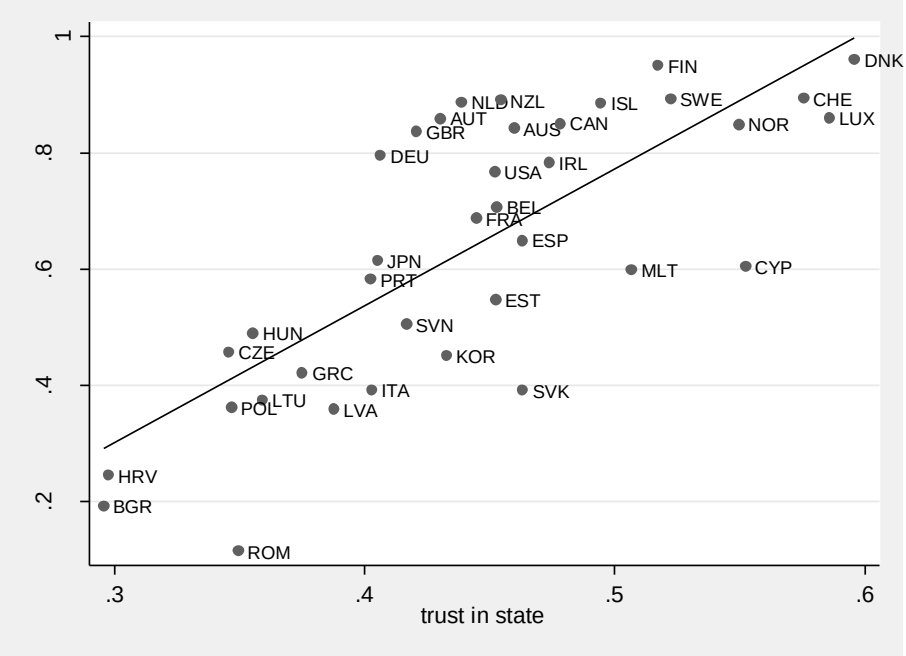
Yet, confidence in institutions is at least related to perceived performance of an organization. For example, Hudson (2006) reports that institutional trust, although endogenous with respect to the performance of the respective institution, changes in the individual's personal circumstances. A recent paper by Grönlund and Setälä (2012) shows that institutional trust is influenced by personal perceptions of the incorruptibility and honesty of institutional actors. Van Ryzin (2011) finds fairness of the administrative process to have a stronger effect on trust of civil servants than organizational outcomes.

Figure 2 illustrates that expert's assessments of a country's governance quality, as measured by the World Bank's Worldwide Governance Indicators, and the country averages of our *trust in state*-variable are strongly correlated.[7]

[6] We calculated the mean of all four confidence variables. In cases in which one or two of the respective confidence variables were missing we calculated the simple mean of available data. This appears to be justified as the individual confidence indicators are highly correlated (Spearman's rho always higher than 0.4 in a sample of more than 130,000 observations). Moreover, principal component factor analyses show that all variables load on just one factor. For calculation of the trust in state-variable we did not include confidence in the police because correlation with other confidence variables is much lower.

[7] A simple bi-variate regression of the Governance Index-averages on our *trust in state* averages for 37 countries gives an R-squared of 0.57, and the respective *trust in state*-coefficient is significant at the 1%-confidence level.

Figure 2: Expert assessments of governance quality and trust in state



Note: Governance quality is measured by the simple decade average (2000-2009) of the World Bank's Worldwide Governance Indicators for government effectiveness, , regulatory quality, rule of law, and control of corruption. See Kaufmann, Kraay, and Mastruzzi (2011). We re-coded the Governance Indicator to a 0-1-scale, higher values showing better quality. Trust in state measures the country averages over the same period.

(3) Trust in major companies

As a further institutional trust variable, we employ the WVS/EVS survey question responses on the degree of confidence in major companies. As regards our research questions, co*nfidence in major companies* is of overwhelming importance. If people do not trust big companies we expect them to be more supportive of government intervention and Welfare State provisions. We re-coded the original four-step-variable to a 0-1-scale, higher scores indicating a stronger confidence in major companies.

The main idea is that a high confidence in state actors does not necessarily go hand-in-hand with a more pro-interventionist attitude. If people trust big companies we would expect them to be less supportive of government intervention but only to the extent that they have a comparably smaller trust in state actors. However, one important idea of the related literature

is that trust in state actors and in major companies may be embedded in a larger generalized trust attitude (Grönlund and Setälä, 2012).[8]

At the country level, 2000-2009 decade averages of social trust are significantly correlated with both state trust and trust in major companies. Yet, the correlation with state trust (+0.57) is stronger than the correlation with trust in major companies (+0.39). At the individual level, t-tests of sample mean differences (see Table 1) reveal that people who claim to trust others in general (i.e., social trust = 1) tend to report significantly higher confidence both in state actors and in major companies. The difference between trust in state actors and in major companies is virtually zero for people who do not trust interpersonally. Generally trusting people tend to report a slightly, but statistically significant higher confidence in state actors as compared to major companies.

Table 1: t-tests of sample mean difference at the individual level

	sample mean if		difference
trust in …	social trust = 0	social trust = 1	significant at 1%?
state actors	0.426	0.490	yes
major companies	0.427	0.457	yes
difference significant at 1%?	yes	yes	

3.3 Estimation method and model

The aim of the paper is to explore the impact of social trust on preferences for government intervention. Cross-country regressions of the relationship between intervention attitudes and trust levels are however hard to interpret causally. We therefore employ individual level data in combination with national level data, as this has the advantage to alleviate endogeneity concerns (Landier, Thesmar, and Thoenig, 2008).[9]

[8] Empirical evidence for such an individual-level correlation between social trust and institutional trust is however ambiguous (Newton and Norris, 2000; Zmerli and Newton, 2008).

[9] Multilevel models conjecture that individual behavior is a function of both individual-level and non-individual variables of a higher level, e.g. a social group or a country, to which the individual belongs. Using individual level data increases number of observations and precision of estimates considerably. As individual observations are probably not independent within a country, standard errors of estimated parameters – especially for variables on the country-level – show a serious downward bias, c.f. Moulton (1990). A standard approach we also follow here is to estimate OLS, and correct standard errors for country level-clustering. The number of countries (37) falls short of the 42 to 50 clusters required to neglect serial correlation issues for the macro covariates, cf. Angrist and Pischke (2009). However, we are primarily interested in individual level covariates, and here a potential bias does not appear to be very strong. Moreover, intra-class correlation is only around 0.06, and hence 94% of the variation is attributable to individual level differences.

Formally, we model government intervention attitudes (gov_{ijt}) of individual i living in country j at time t depending on interpersonal trust ($soctrust_{ijt}$), institutional trust ($insttrust_{ijt}$), and a set of additional individual (X_{ijt}), and country-wide covariates Z_{jt}:[10]

$$\mathrm{gov}_{ijt} = \beta_0 + \beta_1 \mathrm{soctrust}_{ijt} + \beta_2 \mathrm{insttrust}_{ijt} + \beta_3 (\mathrm{soctrust}_{ijt} \times \mathrm{insttrust}_{ijt}) + \beta_4 \mathrm{X}_{ijt} + \beta_5 \mathrm{Z}_{jt} + \varepsilon_i,$$

To examine whether the effect of social trust on intervention attitudes is conditional on the relative institutional trust in state actors vs. companies we introduce an interaction of social trust and institutional trust variables such that the marginal effect of social trust is given by

$$\frac{\partial \mathrm{gov}_{ijt}}{\partial \mathrm{soctrust}_{ijt}} = \beta_1 + \beta_3 \times \mathrm{insttrust}_{ijt}.$$

Institutional trust refers to both our measures of *trust in state* and *trust in companies*. We take two different routes to assess the conditional impact. First, we employ the difference between trust in state and trust in major companies as combined institutional trust indicator (*trust difference*). In that case, we expect $\beta_1 < 0;\ \beta_2 > 0;\ \beta_3 > 0$. Second, we introduce confidence in state actors and in major companies as two separate covariates, expecting $\beta_2 > 0;\ \beta_3 > 0$ in case of trust in state, and $\beta_2 < 0;\ \beta_3 < 0$ in case of trust in major companies.

To deal with unobserved cross-country heterogeneity we introduce country fixed effects, and to account for heterogeneity in the time dimension we also employ survey wave dummies. The results of our OLS-estimates[11] will be presented in the following section 4.

4 Results

We start presentation of results in Table 2 with a base model (1) which is including all micro- and macro- covariates[12], and only our social trust dummy. The dummy indicating whether the

[10] Individual covariates *X* include gender, age, income position, employment status (self-employed, retired, unemployed), subjective health status, and educational level. All variables are obtained from the WVS/EVS. As macro controls *Z* we include the unemployment rate (from Eurostat/OECD statistics) and (the log of) real GDP per capita (in PPS) from the Penn World Tables Series 7.1 (Heston, Summers, and Aten, 2012). Summary statistics of all variables can be found in the Appendix.

[11] We also considered ordered probit estimation, but opted for OLS for two reasons: (1) The composite government intervention-index has many more than just 10 steps (as the base variables that are forming the index) and can thus be interpreted as 'almost cardinal'. (2) The introduction and interpretation of interaction variables is far easier in OLS than in ordered probit.

[12] Complete results including the whole battery of covariates are shown in the appendix.

respondent trusts other unknown people in general shows a negative sign but is far from significantly related to government intervention preferences at conventional levels ($p > 0.56$). One possible explanation is that the effects of social trust are conditional on institutional confidence in state actors or private companies.

Specification (2) uses instead the 'trust difference' between state and companies as explanatory variable. As expected, a positive trust difference is positively associated with interventionist attitudes. The bigger the difference between individual confidence in state actors and in major companies, the stronger are individual preferences for government interventions. A coefficient sign of 0.07 indicates that an individual who reports highest confidence in state actors and complete lack of trust in private companies on average also reports a stronger preference for government interventions of +0.14 (on a scale ranging from 0 to 1). The standardized beta-coefficient is +0.09, meaning that a one standard deviation increase of the respective index value increases government intervention attitudes by almost 0.1 standard deviations.

Table 2: Impact of different forms of trust on government intervention attitudes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
social trust	**-0.001**			**-0.003**	**-0.004**	**-0.007**	**0.019**
	0.563			0.115	0.070	0.201	0.001
trust difference		**0.070**		**0.070**	**0.051**		
		0.000		0.000	0.000		
social trust X **trust difference**					**0.052**		
					0.000		
trust in state			**0.022**			**0.017**	**0.021**
			0.100			0.200	0.127
trust in companies			**-0.093**			**-0.092**	**-0.077**
			0.000			0.000	0.000
social trust X **trust in state**						**0.014**	
						0.152	
social trust X **trust in companies**							**-0.045**
							0.000
Observations	110359	107448	107448	103453	103453	103453	103453
adj. R-squared	0.128	0.137	0.141	0.137	0.138	0.141	0.142

Fixed effects OLS with standard errors adjusted for clustering at the country level. Coefficients reported in bold, cluster-robust p-values below. Additional control variables include gender, age, relative income position, employment status (self-employed, retired, unemployed), subjective health status, and educational level. Macro controls include unemployment rate and (the log of) real GDP per capita (in PPS). Constant, country and survey wave effects not reported.

In equation (3) we use the components of institutional confidence, trust in state actors and trust in major companies, separately. As expected, trust in state actors is positively related to intervention attitudes, whereas trust in companies is associated negatively with intervention. Note that the effect of distrust in companies appears to be substantially stronger correlated to positive intervention attitudes than the effect of trust in state actors. Estimated beta-coefficients (not shown) are +0.02 (state actors) and -0.12 (major companies), respectively.

Specification (4) employs simultaneously social trust and institutional trust difference variable. Trust difference behaves exactly as in (2) while generalized social trust is now close to the 10%-significance level with a negative sign, as predicted by Aghion et al. (2010). In specification (5) we add the respective interaction term of social trust with the trust difference variable. Here all three variables of interest are associated with intervention attitudes with the expected sign. The marginal effect of social trust on intervention preferences is conditional on the individual assessment of relative confidence in state vs. companies. Figure 3, which is a graphical illustration of estimation equation (5), shows the conditional effects clearly. At low levels of trust in companies and comparably high levels of confidence in state actors social trust is associated with higher demand for government action. Put differently, distrusting people tend to demand more government intervention the stronger their general distrust spills over to major companies, and the less it spills over to state actors. This is certainly in line with the reasoning of Aghion et al (2010). On the contrary, generally trusting people tend to have a stronger taste for government interventions if they have a comparable stronger confidence in state actors than in major companies. Distrusting people hence may also demand less government regulation if their confidence in state actors, for example due to a high level of perceived corruption, is smaller than their confidence in companies. This contradicts the idea of Aghion et al., that distrusting people always have a stronger taste for interventions, even if they expect government to be highly corrupt.

Figure 3: Marginal effect of social trust on government intervention attitudes, conditional on difference between trust in state and trust in companies

Calculation of marginal effects based on regression equation (3) in Table 2. 10%-confidence intervals based on corrected standard errors according to Brambor, Clarke and Golder (2006).

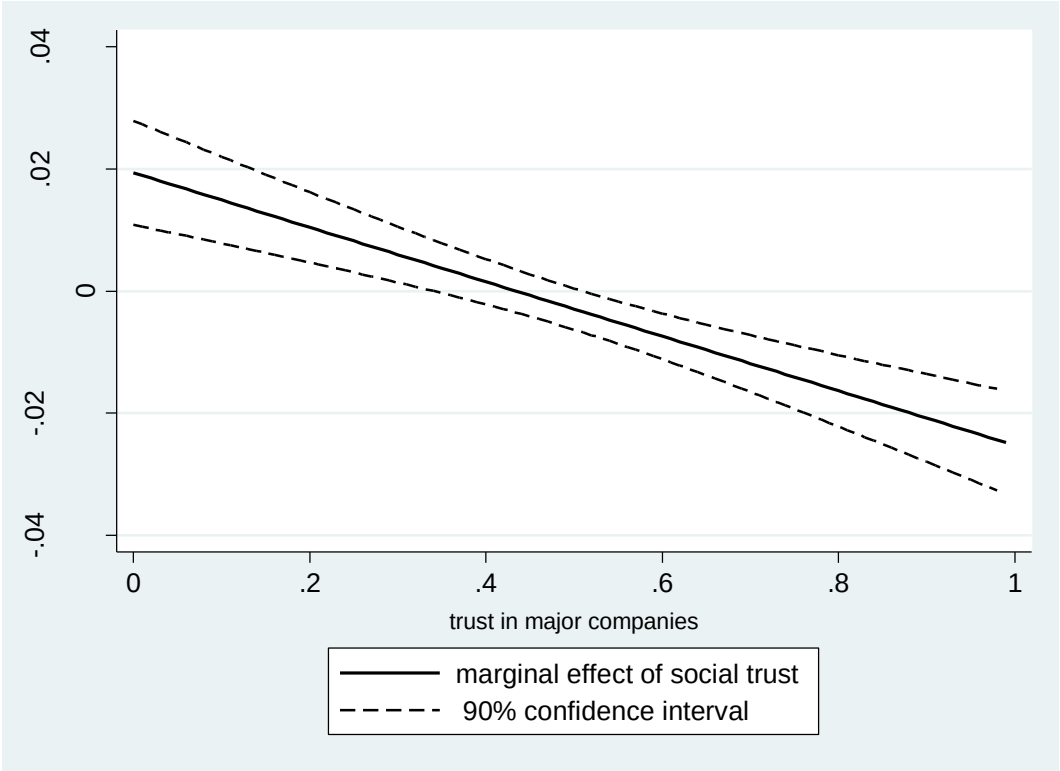
In estimations (6) and (7) of Table 1 we also add generalized social trust but replace the trust difference variable by its components, i.e. trust in state actors and trust in major companies. The results imply that interaction effects are mainly driven by the (lack of) confidence in major companies. While both variables have expected signs only trust in major companies is significant at a 10%-level. The lower trust in major companies is, the stronger is individual taste for intervention. Given a certain level of (dis-)trust in major companies, trust in state actors plays a surprisingly small role for interventionist preferences.

Figure 4 displays the marginal effects of social trust according to equation (7) in Table 2. At low levels of institutional trust in major companies, interpersonal trust is associated with a stronger demand for government intervention; at high levels of confidence in companies, high social trust leads to weak interventionist preferences.

Our base regressions provide evidence that improved confidence in state actors and distrust in major private companies jointly contribute to a more positive view of government interventions. The effect of distrust in major companies appears to be even more important for attitude

formation. Whether generalized distrust is related to a positive view of government intervention, or not, depends on confidence in state actors and major companies.

Figure 4: Marginal effects of social trust on government intervention attitudes, conditional on trust in major companies



Calculation of marginal effects based on regression equation (7) in Table 2. 10%-confidence intervals based on corrected standard errors according to Brambor, Clarke and Golder (2006).

5 Sensitivity and robustness

In Table 3 we report results of sensitivity and robustness tests. A first test is to include an indicator for self-reported political ideology. Individual views about the proper role of the state are mirrored frequently in ideologies. Left-leaning people are conjectured to be more pro-income redistribution and more market-skeptical. If left vs. right ideological convictions are primarily determined by government intervention attitudes and beliefs about the proper role of the state, it would not make sense to employ ideological conviction as an additional explanatory variable (rather as dependent variable), as it would only measure a kind of tautology: Left wingers would then (by definition) be supportive of intervention, while political right-wingers are not – again by definition.

Table 3: Robustness tests with political ideology and alternative intervention attitude measures

dependent variable:	(1) gov't intervention	(2) state ownership	(3) gov't responsibility	(4) harmful competition	(5) state control of firms	(6) income equalization	(7) gov't intervention dummy	(8) anti gov't intervention dummy
social trust	**-0.005**	**-0.005**	**-0.005**	**-0.004**	**-0.024**	**0.005**	**-0.119**	**0.017**
	0.013	0.098	0.190	0.220	0.000	0.153	0.020	0.476
trust difference	**0.049**	**0.067**	**0.030**	**0.051**	**0.086**	**0.066**	**0.276**	**-0.575**
	0.000	0.000	0.004	0.000	0.000	0.000	0.056	0.000
social trust X trust difference	**0.048**	**0.062**	**0.052**	**0.038**	**0.060**	**0.047**	**0.747**	**-0.499**
	0.000	0.000	0.000	0.000	0.003	0.001	0.000	0.000
left ideology	**0.152**							
	0.000							
N	89603	105020	112498	111586	37218	112191	103453	103453
Adjusted R-squared	0.172	0.099	0.148	0.067	0.087	0.090		
Pseudo-R-squared							0.050	0.091

(1)-(6) Fixed effects OLS, standard errors adjusted for clustering at country level. (7) and (8) logistic regression-estimates, standard errors adjusted for clustering at country level.

Coefficients reported in bold, cluster-robust p-values below. Additional control variables include gender, age, relative income position, employment status (self-employed, retired, unemployed), subjective health status, and educational level. Macro controls include unemployment rate and (the log of) real GDP per capita (in PPS). Constant, country and survey wave effects not reported.

Politically more right-leaning people should however not a priori be expected to be opposed to more intervention. On the one hand, a classical conservative may be skeptical toward a dominating role of government in the economy, at least as regards detailed state interventions. On the other hand, right-wing voters can also be assumed to be in favor of state intervention, as these are often central elements of nationalist party populism (Derks, 2004). A politically rightist ideology is not a shortcut for anti-interventionist/anti-redistribution preferences.

In equation (1) of Table 3 we re-estimated regression (5) of Table 2, including also an indicator for self-assessed political position. Political ideology is measured by a WVS/EVS question, which reads “In political matters, people talk of ‘the left’ and ‘the right’. How would you place your views on this scale, generally speaking?” We recoded answers, which were given originally on a 1-10 point scale to a 0-1-scale, where higher values indicate a more left-wing orientation. Due to missing ideology data, the number of observation drops substantially. As could be expected, left-leaning people appear to have stronger preferences for intervention. However, our main result hold, trusting people have a stronger taste for government intervention if they have a higher confidence in state actors as compared to companies.

Concerns may also be raised as regards our composite indicator of government intervention attitudes. Equations (2) to (4) of Table 3 display results of similar regressions when we instead use its three component variables *state ownership*, *government responsibility* and *harmful competition* (see section 2). All results are confirmed.

In equations (5) and (6) we repeat this exercise with two variables from WVS/EVS that may also be interpreted as proxies for government intervention. Data on preferences for a stronger state of control of firms is only available for a small sample, approximately one third of the original sample size. Yet, the variable behaves exactly as the alternative indicators used above. In equation (6) we employ income equalization preferences, derived from a WVS/EVS survey item, which reads "Incomes should be made more equal vs. We need larger income differences as incentives". Answers apparently reflect opinions about a potential redistributive role of the state. The question does not, however, include an assertion about preferred (political) means of reducing income differences, via higher social benefits, minimum wages, or other forms of state interventions. In principle, the pattern is similar to previous government intervention measures.

To account for non-linearity, in column (7) we report results of a simple logistic regression estimate. The dependent variable is an intervention attitude dummy which takes the value '1' if our government intervention attitude is equal or above 0.7, otherwise 0. We thus capture only those respondents who have a strongly positive view of interventions. Estimates show a very

similar relationship of interpersonal/institutional trust and intervention attitude formation. For respondents who trust companies much stronger than state actors, generalized trust is associated with a reduced probability of strongly advocating intervention, while respondents who trust state actors much stronger than companies have a high probability of being in favor of government intervention. In equation (8), the dependent variable is a dummy indicating strong anti-intervention attitudes (government intervention attitude scores smaller than 0.3). The principle outline is again confirmed: Strong opposition against intervention is highest for generally trusting people if respondents simultaneously distrust state actors and trust major companies.

6 Summary and outlook

Both the literature focused on the relationship between informal institutions and economic growth, and the literature dealing with cultural determinants of Welfare State size point out the importance of social trust. Yet, the impact of social trust on economic policy preferences is still under-researched. The central notion provided in the present paper is that the influence of social trust on government intervention attitudes is conditional on the perceived reliability, honesty, and incorruptibility of state actors and of major companies. Hence, our focus rests on interpersonal trust and its interplay with institutional trust variables in framing interventionist preferences.

Our starting point is a paper by Aghion, Algan, Cahuc, and Shleifer (2010) that individuals who generally distrust others have a stronger taste for government regulation of economic activities, while people with high interpersonal trust are in favor of less strict regulations and state control. This line of argumentation however neglects that (lack of) trust also spills over to (lack of) trust in governmental as well as in private institutions. People who tend to (dis-)trust other unknown people also tend to distrust state actors and companies. Hence, individual preferences and the 'taste' for interventions are supposed to depend on the relative differential between personal trust in state actors, and in private market actors, such as entrepreneurs or major companies.

Our empirical results are clearly supportive of the idea that the impact of social trust on government intervention attitudes is conditional on individual confidence in state actors and in companies. Estimating the determinants of interventionist preferences with data from the World Values Survey/European Values Study for approximately 100,000 -115,000 individuals in 37 OECD- and EU-countries over the time period 1990-2009, we can show that improved

confidence in state actors and distrust in major private companies jointly contribute to a more positive view of government interventions. The effect of a lack of confidence in companies appears to be substantially more important for attitude formation. People who report a high level of generalized trust (to unknown other people) have stronger interventionist preferences when their confidence in state actors is high and confidence in companies is comparably low. On the other hand, general distrust is supportive of government intervention preferences only if distrusting people have a smaller confidence in private than in state actors. One implication of these results would be that if the recent Financial Crisis has lead to a reduction of trust in major companies then this only turns into a higher demand for government regulation when at the same time trust in state actors did not fall even more.

A possible extension of this analysis, left to future work, is to distinguish more clearly between trust in regulative and judicial authorities. Glaeser and Shleifer (2003) and Shleifer (2010) argue that inefficiencies in the legal system cause dispute resolution in an expensive, unpredictable, and biased manner. However, self-regulation of private contracts is less reliable when contracts are subject to unpredictable interpretations and extremely costly to enforce. In that case, relying on detailed regulatory rules set by the government could be more efficient. The choice between politically biased regulators and potentially incompetent judges, then, is a choice between two imperfect alternatives and may depend also on the relative trust or confidence in the two institutions.

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Annex Table A1: Government intervention attitudes, country averages 1990s and 2000s

country	code	Government intervention attitudes	
		1990s	2000s
Australia	AUS	0.33	0.39
Austria	AUT	0.27	0.36
Belgium	BEL	0.35	0.40
Bulgaria	BGR	0.39	0.43
Canada	CAN	0.27	0.36
Croatia	HRV	0.36	0.41
Cyprus	CYP	.	0.44
Czech Republic	CZE	0.33	0.39
Denmark	DNK	0.32	0.36
Estonia	EST	0.43	0.44
Finland	FIN	0.34	0.39
France	FRA	0.36	0.42
Germany	DEU	0.32	0.39
Greece	GRC	.	0.44
Hungary	HUN	0.42	0.48
Iceland	ISL	0.29	0.35
Ireland	IRL	0.35	0.35
Italy	ITA	0.39	0.44
Japan	JPN	0.48	0.44
Latvia	LVA	0.41	0.44
Lithuania	LTU	0.39	0.42
Luxembourg	LUX	.	0.38
Malta	MLT	0.37	0.33
Netherlands	NLD	0.38	0.40
New Zealand	NZL	0.36	0.33
Norway	NOR	0.35	0.37
Poland	POL	0.45	0.48
Portugal	PRT	0.39	0.41
Romania	ROM	0.34	0.35
Slovakia	SVK	0.44	0.39
Slovenia	SVN	0.38	0.41
South Korea	KOR	0.40	0.50
Spain	ESP	0.45	0.49
Sweden	SWE	0.30	0.35
Switzerland	CHE	0.25	0.36
United Kingdom	GBR	0.38	0.33
United States	USA	0.26	0.33
mean		0.36	0.40

Source: Own calculations based on Word Values Survey/European Values Study (var. years)

Annex Table A2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
intervention attitudes					
government intervention attitude	147708	0.382	0.197	0	1
state ownership	147708	0.399	0.274	0	1
government responsibility	147708	0.465	0.310	0	1
harmful competition	147708	0.300	0.257	0	1
state control of firms	57357	0.487	0.300	0	1
income equalization attitude	143924	0.482	0.311	0	1
trust variables					
trust in people	142171	0.351	0.477	0	1
trust in state actors	143415	0.448	0.210	0	1
trust in major companies	135510	0.437	0.255	0	1
trust difference	132500	0.010	0.254	0	1
Individual controls					
female	147669	0.520	0.500	0	1
age	147295	4.532	1.700	1.5	10.8
bad health status	127492	0.300	0.229	0	1
income low	147708	0.168	0.374	0	1
income high	147708	0.175	0.380	0	1
retired	144176	0.204	0.403	0	1
unemployed	144176	0.054	0.226	0	1
self employed	144176	0.061	0.240	0	1
education low	147708	0.219	0.414	0	1
education high	147708	0.181	0.385	0	1
left ideology	123160	0.509	0.228	0	1
Macro controls					
GDP per capita (log.)	113	10.014	0.542	8.532	11.287
unemployment rate	108	0.068	0.036	0	0.206

Source: World Values Survey/European Values Study, except for *GDP per capita* (Heston, Summers, and Aten, 2012) and *unemployment rate* (Eurostat AMECO database).

Annex: Table 2 (including covariates)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
social trust	**-0.001**			**-0.003**	**-0.004**	**-0.007**	**0.019**
trust difference		**0.070**		**0.070**	**0.051**		
social trust X trust difference					**0.052**		
trust in state			**0.022**			**0.017**	**0.021**
trust in companies			**-0.093**			**-0.092**	**-0.077**
social trust X trust in state						**0.014**	
social trust X trust in companies							**-0.045**
Covariates:							
female	**0.029**	**0.028**	**0.028**	**0.028**	**0.028**	**0.028**	**0.028**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
age (/10)	**-0.005**	**-0.006**	**-0.006**	**-0.006**	**-0.006**	**-0.006**	**-0.006**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
retired	**0.004**	**0.004**	**0.004**	**0.004**	**0.004**	**0.004**	**0.004**
	0.243	0.290	0.230	0.267	0.256	0.196	0.197
health status	**0.075**	**0.074**	**0.069**	**0.073**	**0.072**	**0.068**	**0.068**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
income_low	**0.019**	**0.019**	**0.019**	**0.019**	**0.019**	**0.019**	**0.019**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
income_high	**-0.024**	**-0.024**	**-0.024**	**-0.025**	**-0.025**	**-0.024**	**-0.024**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
unemployed	**0.035**	**0.036**	**0.035**	**0.036**	**0.035**	**0.034**	**0.034**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
self employed	**-0.042**	**-0.043**	**-0.044**	**-0.043**	**-0.043**	**-0.044**	**-0.044**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
education_lower	**0.024**	**0.023**	**0.024**	**0.024**	**0.024**	**0.024**	**0.024**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
education_upper	**-0.012**	**-0.013**	**-0.012**	**-0.012**	**-0.013**	**-0.012**	**-0.012**
	0.006	0.001	0.003	0.002	0.001	0.003	0.003
unemployment rate (macro)	**0.268**	**0.245**	**0.222**	**0.235**	**0.234**	**0.211**	**0.211**
	0.133	0.200	0.219	0.223	0.225	0.247	0.249
GDP per capita (log.) (macro)	**-0.043**	**-0.043**	**-0.048**	**-0.044**	**-0.043**	**-0.048**	**-0.047**
	0.299	0.304	0.243	0.298	0.304	0.240	0.245
N	**110359**	**107448**	**107448**	**103453**	**103453**	**103453**	**103453**
adjusted R-square	**0.128**	**0.137**	**0.142**	**0.137**	**0.138**	**0.141**	**0.142**

Fixed effects OLS with standard errors adjusted for clustering at the country level. Coefficients reported in bold, cluster-robust p-values below.