

Trust me; I am corrupt

The role of beliefs and institutions in determining political trust

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Outline

1 Background

- Motivation
- Overview
- Literature

2 Model

- Setup
- Assumptions
- Actions

3 Empirical Analysis

4 Conclusions

Motivation

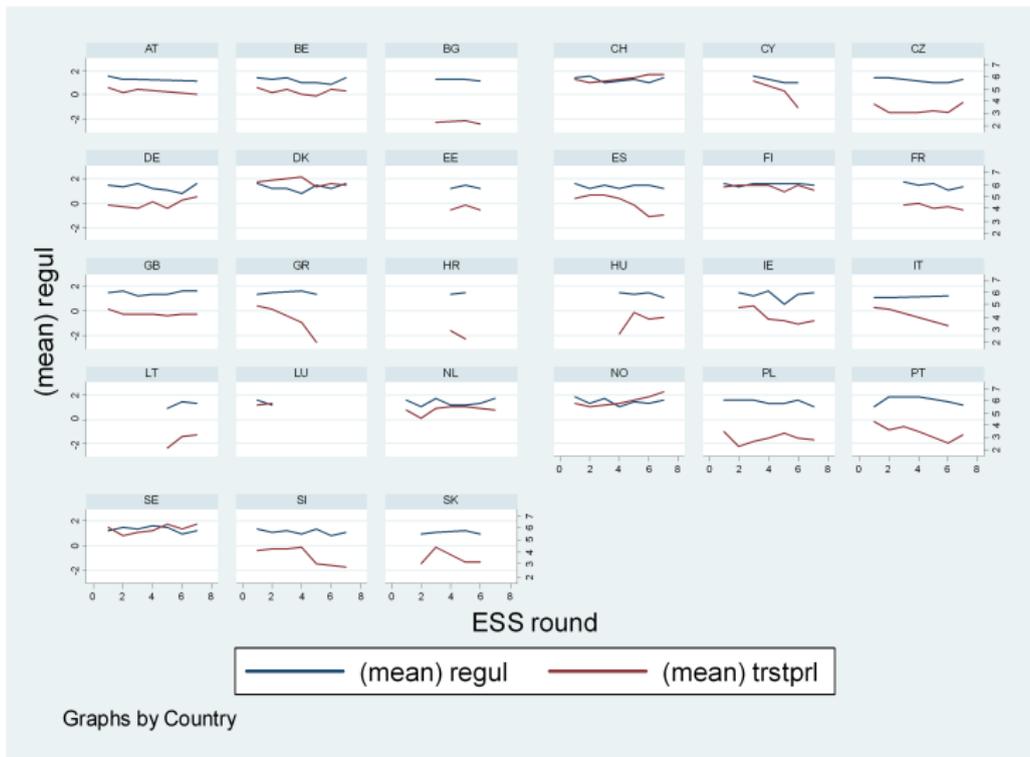
- Data show a divergence between macro (aggregate indices) and micro (individuals' trust) evaluations of political institutions
- Divergence seems to be greater and significant only in countries with overall weak institutional framework

Possible reasons:

- Rational agents, given full information, would base their trust in political institutions on past institutional performance and prior beliefs
- Information asymmetries (more prominent in weak institutional frameworks) lead to decisions less based on institutional quality and more on other factors.

Motivation cont.

For example:



Overview

Research question: Under which conditions will an individual decide to trust a political institution given a set of beliefs / personal characteristics?

At first, we set up a principal-agent framework in which the static equilibrium will provide evidence on the cost of information asymmetries on trust decisions

Using micro data from Eurobarometer and the European Social Survey we try to test the hypotheses set on the theoretical model.

Results show that in countries with weak institutional frameworks decisions to trust political institutions stem primarily from personal beliefs rather than evaluating institutional quality

Trust

Most definitions of trust agree that it is the firm belief in the reliability of an other party to perform in an expected way (Uslaner, 2018).

Milgrom Roberts (1984) hold that a certain level of trust is required in any economic transaction. Recent theoretical and empirical evidence show that trust is:

- Pervasive (Guiso, 2013; Fehr, 2009)
- Persistent across generations (Guiso, 2013)
- Heterogeneous across countries (Tabellini, 2008a)

Political trust

Evidence (mostly empirical) suggest that trust in political institutions (i.e. governments, parliaments, legal system) is quite distinctive (although an extension of prior beliefs-general trust):

- Political trust is responsive to economic and institutional performance (Guiso, 2013; Drakos et al, 2016)
- Heterogeneous across different political bodies (Uslaner, 2018)

Debates:

- Whether political trust variables stem mainly from measurement error by individuals' responses on surveys - model provides some insights
- Trust in political institutions includes the institution as well as its representatives (i.e. Trust in parliament- notion of parliament and current MPs)

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Model

We set up a model where we consider the choice of rational representative individuals (principal) on whether to trust a particular political institution.

To deal with the institution-representative problem we set an hierarchical form to the model similar to Benoit (2004):

- Agents at the lower level (i.e. politicians, MPs, judges)
- Institutions at the intermediate level (i.e. governments, parliaments, legal systems)
- Principal at the top level (individuals)

Model

Agents (lower level)

- $t \sim N(a, A)$ is the type of the agent (i.e. politician, MP), a being the median agent
- Agents can be of two types: honest (β^h) and corrupt (β^c) with respective probabilities (π^h) and (π^c)
- Produce two types of outcomes: efficient (S^E) and inefficient (S^L)
- Agents emit two kind of signals: signal \mathbf{c} to the principal (public opinion) and signal \mathbf{i} to the political institution

- Honest agent will produce the efficient outcome with probability (κ^h) whilst the corrupt one will produce the efficient one with probability (κ^h) when there are no opportunities for corrupt acts and the inefficient one with certainty if given the opportunity for corruption

Model cont.

- Political institution (intermediary level)
 - Follows 2 strategies: candid (conveys true signal) and neutral (conveys no signal)
 - Acts in accord with majority sentiment
 - Receive signal with distribution $N(t, I)$
 - Institutions signal reflects insider information and expert opinion

Model cont.

- Principal (public)
 - Has an a priori belief about the type of the agent $t \sim N(\alpha, A)$
 - Has set a benchmark \mathbf{b} upon which decide whether the agent is trustworthy or not
 - $\rho \geq 1/2$ is the standard of decision. Agents will not be trusted if $Prob(t \leq b) \geq \frac{1}{2}$
 - Receives signals with distribution $N(t, C)$ which reflect public knowledge
 - Maximizes utility (expressed by trust) based on the outcome and the resources spend $U^P(S, R) = U^P(S) - R$
 - Efficient outcomes are strictly preferred to inefficient $U^P(S^E) > U^P(S^L)$

In presence of full information the principal would allocate larger R to honest agents

Assumptions (limitations)

- Median agent is good ($a > b$)
- Agents are purely self interested (no moral costs)
- The behaviour of the institution is determined by majority rules
- All actors are rational (for behavioural evidence - Benoit, (2004))
- Standard of decision is $\frac{1}{2}$ - we later on explore a distribution of p s
- Agents type (t) is continuous but principal has a dichotomous view on agents types
- Concerned with democracies

Note: Assumptions of normal distributions is made for simplicity since posteriors will also be normally distributed. Justification from CLT - Benoit (2004)

Principal's action

Principal has to decide whether the agent is to be trusted or not ($t \geq b$) based on the distribution of agents, prior beliefs and signals. Considers:

- Candid institution (full information)
 - Principal has access to both signals c and i
 - **Posterior beliefs** $t \sim N(\nu, \delta^2)$ where $\nu(i,c,a,I,C,A)$ and $\delta^2(I,C,A)$
 - Decides to trust an agent $\text{Prob}(t \leq b \mid i,c) \geq \rho \Leftrightarrow \Phi\left(\frac{b-\nu}{\delta}\right) \geq \rho$
- Given full information it will only be optimal to allocate higher R to the honest agent if:

$$\kappa^h \times UP(S^E) + (1 - \kappa^h) \times UP(S^L) - R(S^E) \geq UP(S^L) - R(S^L) \Leftrightarrow$$

$$\kappa^h \geq \frac{\Delta R}{\Delta UP} \quad (1)$$

where $(\Delta R = R(S^E) - R(S^L))$, and $\Delta UP = UP(S^E) - UP(S^L)$

Principal's action cont.

- Neutral institution
 - Principal has access only to signal c (imperfect information)
 - **Posterior beliefs** $t \sim N(\gamma, \sigma^2)$ where $\gamma(c, a, C, A)$ and $\sigma^2(C, A)$
 - Decides to trust an agent $\text{Prob}(t \leq b \mid c) \geq \rho \Leftrightarrow \Phi\left(\frac{b - \gamma}{\sigma}\right) \geq \rho$
- Given imperfect information it will only be optimal to allocate higher R to the honest agent if:

$$U^P(S^L, R(S^L)) = U^P(S^L) - R(S^L)$$

$$U^P(S^E, RS^E) = \pi^h \times [\kappa^h \times U^P S^E + (1 - \kappa^h) \times U^P S^L] + \pi^c \times U^P(S^L) - R(S^L)$$

$$\Leftrightarrow \kappa^h > \Delta R / (\pi^h \times \Delta U^P)$$

$$\text{where } \Delta R = R(S^E) - R(S^L), \text{ and } \Delta U^P = U^P(S^E) - U^P(S^L)$$

Benefits from full information

Proposition 1

Information asymmetries (weak institutions) create losses to Principal's utility and lead individuals to base trust decisions solely on prior beliefs and signals from current agent representing the institution

Calculating the benefit from full information:

- for the honest agent (β^h) outcomes are known so benefits are 0
- for the corrupt agent (β^c) losses are $\pi^c \times \Delta R$

Meaning that in weak institutional environments:

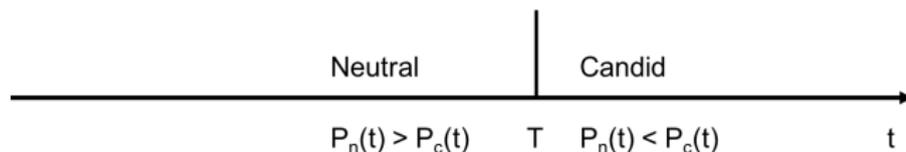
- We can hypothesize that aggregate institutional indices will have little role in determining trust in weak environments

Agent's choice

A selfish agent of type t prefers a neutral institution if the probability to be trusted under neutral institutions is lower than the probability with a candid one

Proposition 2

For all parameters there is a type T such that all agents worse than T will prefer a neutral institution and all agents better than T will prefer a candid one. The cutoff for T will be where probabilities to be trusted are equal under both cases.



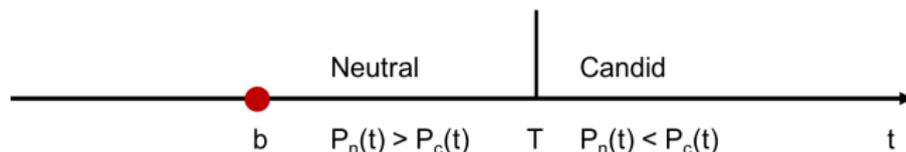
Agent's choice cont.

$$T = \left(1 - \frac{c\sqrt{U}}{A\sqrt{C+U}}\right) b + \frac{c\sqrt{U}}{A\sqrt{C+U}} \alpha + \frac{(\sqrt{C+A} - \sqrt{C\frac{U}{C+U} + A})\sqrt{C}\sqrt{U}}{\sqrt{A}(\sqrt{C+U} - \sqrt{U})} x \quad ; P_I(t) = P_C(t)$$

From Φ standard normal cumulative distribution function we know that since $x \geq 0$ and $\alpha > b$ then $T > b$. T is also linear and increasing in x , therefore:

Proposition 3

For all parameters all bad agents favour a neutral institution as some honest agents do too.



Institution's strategy

Given characteristics of T which is increasing in ρ and the fact that the fraction of agents favoring a neutral union is also increasing in ρ we have that:

Proposition 4

Ceteris paribus if the standard of decision is high enough, weak institutions are favoured.

and

Proposition 5

Ceteris paribus if prior beliefs have large distributions ($A \rightarrow \infty$) only corrupt agents will prefer a neutral (weak) institution

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Overview of empirics

Research question: Under which conditions will an individual decide to trust a political institution given a set of beliefs / personal characteristics?

Connecting the above described model to empirical data we can test Proposition 1:

Hypothesis: In countries with weak institutional frameworks individuals' decisions to trust a political institution conditional to a set of beliefs will be little affected by aggregate institutional indices

To eliminate the bias from data selection and identify that the effect is true and not data driven we are estimating results using the European Social Survey at first and then repeat same specifications with Eurobarometer

European Social Survey

Data collected from the European Social Survey covering the EU27 countries in 7 repeated cross sections conducted between 2002 and 2014.

The data set comprises of approximately 185.587 obs. We estimate the model with two different dependent variables to test validity on different institutions:

- Parliament
- Law and legal system

Data are based on respondents' answers on a 0-10 scale where 10 is associated with more trusted institutions and 0 with least

Control variables

The set of control variables also includes the following measurements of different individuals' characteristics and aggregate outcomes:

- Age in years
- Subjective general health on a 1-5 scale (1=very good and 5=very bad)
- Income on a 1-10 deciles scale
- Years of education
- Marital Status
- Employment status (1=unemployed, 2=employed)
- Gender (1=male, 2=female)
- Religion (0=not at all , 10=Very religious))
- Social trust (0=not at all , 10=Very trustworthy)
- Institutional quality indices (Regulatory efficiency and quality of legal system)
- GDP per capita growth

Methodology

Estimates on this analysis can be primarily given by pooled OLS. However:

- Ordinary regressions assume independence of units; (breached - nesting variables)
- Interpreting aggregated data from the individual level with ordinary regressions might lead to ecological fallacy

Therefore we employ:

- Multilevel analysis which accounts for variance in a dependent variable at the individual level while investigating information simultaneously at the country level at different times
- The use of an hierarchical estimation technique is also consistent with the three-level theoretical model

Estimated Model

Baseline specification is:

$$Y_{ijk} = \beta_1 + \beta_2 \times I_{jk} + \beta_n \times X_{ijk} + e_{ijk} + u_{jk} + v_k$$

- Y_{ijk} is the relevant measure of political trust in the 3 institutions
- I_{jk} is the relative measure of institutional quality
- X_{ijk} are the explanatory variables
- e_{ijk} is the error term in Level 1 (individuals)
- u_{jk} is the error term in Level 2 (years)
- v_k is the error term in Level 3 (countries)

Baseline Results

Table: Political trust determinants including aggregate institutional indicators

	Parliament		Legal system	
	Pooled OLS	Multilevel	Pooled OLS	Multilevel
Individual characteristics	YES	YES	YES	YES
Country characteristics	YES	YES	YES	YES
Regulatory Efficiency	0.040 (6.94)**	0.050*** (9.02)	- -	- -
Legal Quality	-	-	0.039*** (46.71)	0.045*** (52.13)
N	186.587	186.587	186.587	186.587
t statistics in ()	** $p < 0.05$	*** $p < 0.01$		

Variance decomposition:

- individual level - 0.85
- country level - 0.13
- time less than 0.01

Splitting the sample

To explore the implications of the theoretical model presented above we need to split the sample to countries with strong and poor institutional quality:

- Strong institutional framework includes Nordic countries, DE, GB, FR, AU, NL, LU, CH, BE, IE
- Weak institutional framework includes post communist countries, GR, IT, CY, ES and PT

Strong institutions group

Table: Countries with strong institutional framework

	Parliament Multilevel	Legal system Multilevel
Individual characteristics	YES	YES
Country characteristics	YES	YES
Regulatory Efficiency	0.057*** (20.21)	- -
Legal Quality	- -	0.073*** (39.53)
N	110.563	110.563
t statistics in ()	** $p < 0.05$	*** $p < 0.01$

Variance decomposition:

- individual level - 0.92
- country level - 0.08
- time less than 0.0001

Weak institutions group

Table: Countries with weak institutional framework

	Parliament Multilevel	Legal system Multilevel
Individual characteristics	YES	YES
Country characteristics	YES	YES
Regulatory Efficiency	0.013 (0.75)*	- -
Legal Quality	- -	0.022* (1.17)
N	75.955	75.955
t statistics in ()	* p<0.10	** p<0.05

Variance decomposition:

- individual level - 0.86
- country level - 0.12
- time level - 0.01

Robustness Checks

- Falsifying institutional index (wrong index to different institutions)
- Expand to other trust variables (i.e. politicians, government)
- Removing countries 1 by 1 and re-estimate
- Try different institutional data sets
- Placebo effect (putting countries in wrong groups)
- Removing waves 1 by 1 and re-estimate
- Above all, re-run specification with Eurobarometer data

Summary of results with robustness checks

Results after robustness confirm that:

- Signs remain the same throughout specifications
- Statistical significance still differs between the 2 groups
- Magnitude of the coefficients vary slightly with enough divergence though
- Variance decomposition remains the same across different checks
- Maybe post-soviet countries should be split on an own group

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What we did and what we didn't

This paper attempts to address the following:

- Why does political trust seem on data so distinctive than any other form of trust
- Whether beliefs and institutions affect political trust through different mechanisms
- If mechanisms are heterogeneous across countries

What we failed to do:

- Unlock the black box of beliefs and see potential endogeneity from residual institutional performance
- Present how things change on the dynamic version of the model where beliefs are updating from past performance (mainly due to lack of data)

Conclusions

Model shows that in countries with poor institutional quality individuals will decide whether to trust a political institution solely based on:

- Prior beliefs
- Signals from actors representing the institution at the given point.

Therefore as shown on the empirical analysis in countries distant from full information (poor institutional framework) political trust is:

- Less sensitive to institutional indices
- Reflect partly the quality of the political actor at the given point as that is perceived by changes in other aggregate outcomes (i.e. GDP, or spreads - Drakos et al. 2016)

Conclusions cont.

In terms of behaviour these results are significant because they might shed light on behaviours that are linked to political trust (aftermaths) such as:

- Why do people support bad governments
- Tax compliance
- Reforms aversity
- Frequent elections in post-2008 EU

Thank you!