# Trust in National Governments in CESEE: Does Income Distribution Have an Impact?

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*(Preliminary results, do not quote without permission)*

FIW-wiiw Seminar in International Economics
December 2016, Vienna

# Outline

# Why and for which outcomes is (institutional) trust policy relevant?

- Term trust is often used interchangeably between institutional and social trust, whereas both measures of trust are highly correlated

- Trust is important for the success of a wide range of public policies that depend on behavioral responses from the public (e.g. tax compliance)

- Trust is necessary to increase the confidence of investors and consumers in order to facilitate or enable transactions and is, thus, relevant for economic growth and development

- Trust is essential for key economic activities, most notably finance and banking

- Conversely, a lack of trust may have adverse effects on political stability and increase uncertainty (e.g. the Brexit vote in UK and, more recently, the outcome of U.S. elections in November)

# The relevance of income inequality for trust

- Inequality harms institutions through rent seeking of the ruling elite (Engerman and Sokoloff 2002, Morrison 2006, Acemoglu et al. 2001)

- Inequality may affect personal interaction (negatively) with other income classes which in turn (negatively) affects trust in and empathy with other groups of society (Wilkinson and Pickett 2009)

- Inequality may worsen regulatory institutions and property rights (Glaeser et al. 2003, Sonin 2003) or harm the quality of the education system if ruling elites are not interested in a more educated labor force (Bourguignon and Verdier 2000)

- Socio-political unrest (Svensson 1998, Figueroa 1996), decreasing social cohesion (Easterly et al. 2006) or riots and political violence (Muller and Seligson 1987, Dutta and Mishra 2005) can be attributed to inequality

- Although this indicates a negative indirect effect on trust, the direct effect of inequality on institutional trust is rarely investigated, in particular for the countries of the CESEE-region

# Relevant literature - Trust & Inequality

- Social trust may be affected by socio-demographic characteristics of individuals (e.g. age, race, sex), see Alesina & Ferrara (2000, 2002) or Hudson (2006)

- Other studies suggest that trust in institutions, in particular in governments and the central bank, may be driven by macroeconomic performance, usually approximated by inflation and unemployment rates, with mixed results (Barone & Mocetti 2016, Hakhverdian & Mayne 2012, Oorshot et al. 2006)

- Catterberg et al. (2005) find a positive link between income and political trust for a set of developing economies in Latin America and Eastern Europe. However, income inequality is not considered as a potential determinant of trust

- Many studies, perhaps driven by data availability, study the inequality-trust nexus in advanced economies such as the U.S. or Western European countries, the results are inconclusive (e.g. Alesina & Ferrara 2000, 2002, Gustavsson and Jordahl 2008, Steijn & Lancee 2011, Bonasia et al. 2016 or Gould & Hijzen 2016)

- Perceived income inequality in Austrian regions, however, affects social trust negatively (Knell & Stix 2016)

- Medve-Balint & Boda (2014) do study the effect of income inequality on trust in CESEE-countries and conclude that income inequality has a negative effect on trust in most but not all Eastern European countries (CZE, HUN, SK, SLO). However, they use country-level income inequality and only one wave of the European Social Survey (2010)

# Contribution of the study

- Unique evidence based on data from the OeNB EuroSurvey on individual institutional trust perceptions of both EU and non-EU CESEE countries.

- Evidence of regional income inequality, which is first-time attempt for some of the countries in our sample.

- Make use of unique data on sentiments about past and future household and country-specific developments

- Applying estimation technique to effectively account for individual, regional and the country-level effects

# The OeNB-Eurosurvey
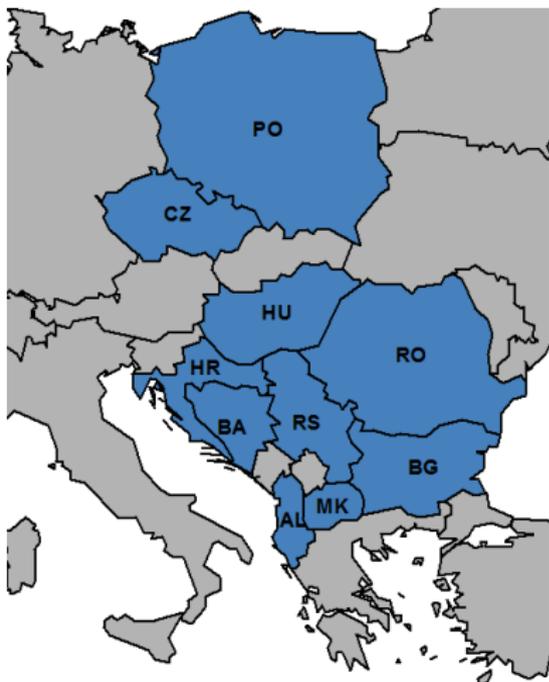


- **6 EU countries** (Bulgaria, Czech Republic, Croatia, Hungary, Poland, Romania)
- **4 non-EU countries** (Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Serbia)
- Samples consist of **1,000 randomly selected respondents per country** and represent the population over 14 years.
- **Samples are representative** with respect to age, gender and regional distribution.

# Data - Institutional trust measure

- Trust in institutions:'I would like to ask you a question about how much trust you have in Government/cabinet of ministers. For each of the following institutions, please tell me if you tend to trust it or tend not to trust it'.
    1. I trust completely
    2. I somewhat trust
    3. I neither trust nor distrust
    4. I somewhat distrust
    5. I do not trust at all.
- Binary dependent variable (1=trust (1/3), 0-otherwise)

# Trust in national governments
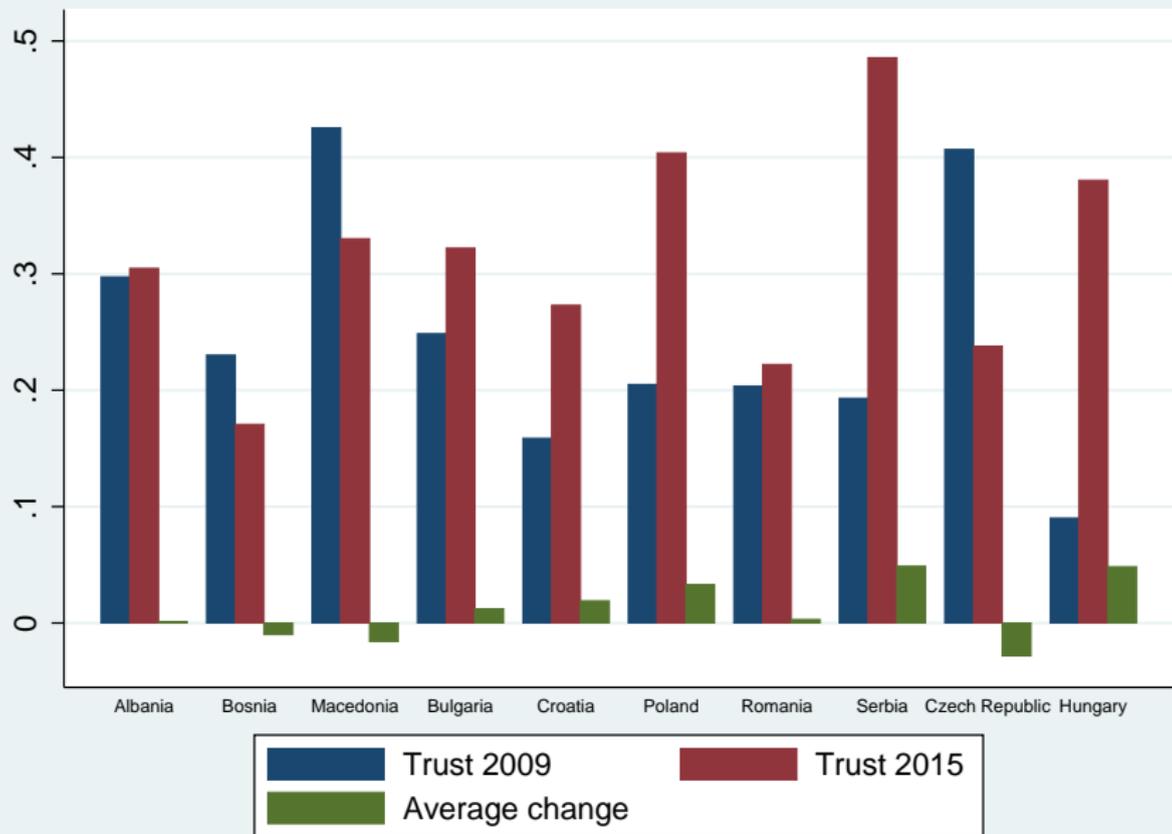
# Trust in institutions
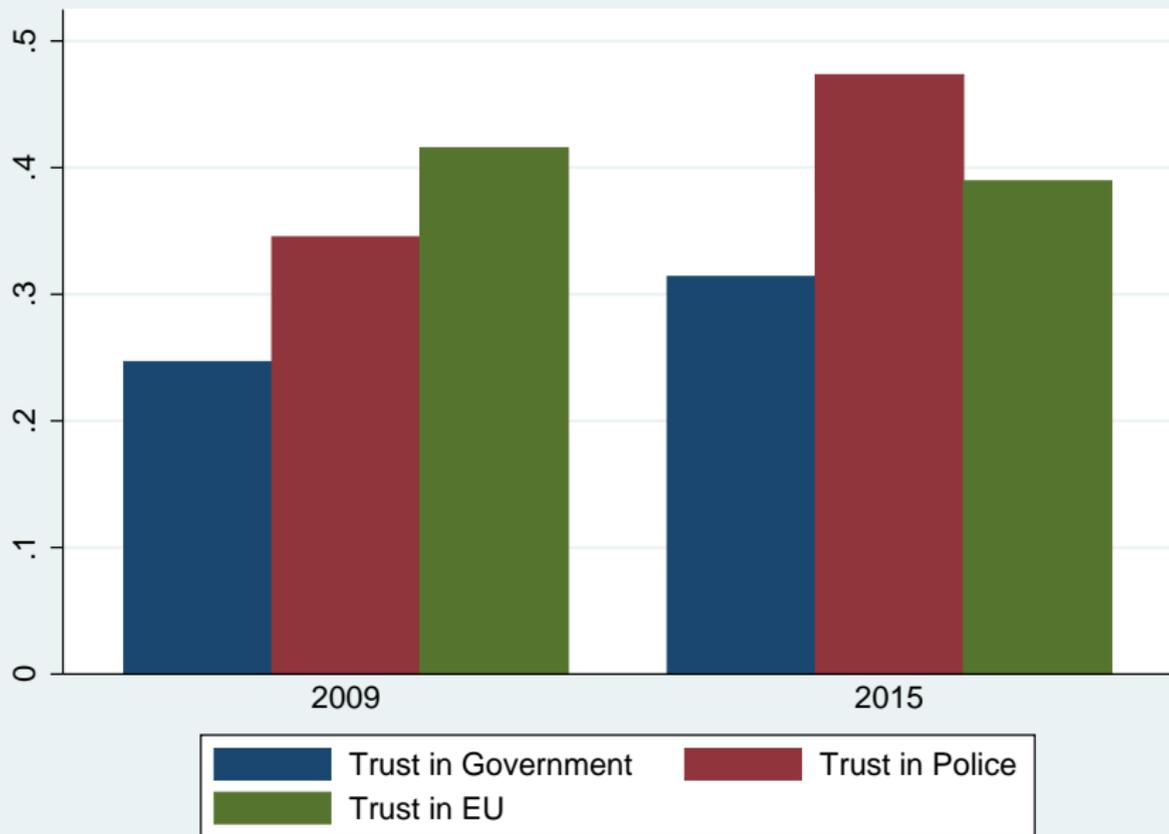
# Data

- Relative income and Income inequality measures based on the following question
  - "What is the total monthly income of the household after taxes?". The respondents have been asked to put their income in 20 categories, which have been defined in a way to ensure that at most 10% of respondents are in each category.

  - Income is calculated in PPP in EUR to guarantee comparability across countries and time

  - Some corrections needed, to be able to calculate Gini coefficients on the regional level

  - Gini coefficient vs alternative income inequality measures

  - OECD weighting method to obtain equivalence income

Origin of Household Income (or Financial Support)

Legend:
- Wages from an employer
- Income from public pensions, unemployment benefits, or other public welfare payments
- Income from abroad (from family members living or working abroad, pension payments, etc.)
- Income from investments (interest, dividends, profit gains, private pension payments, etc.)
- Income from self-employment or own family business
- Financial support from relatives and friends in your country
- Income from renting real estate

# Income data corrections

- Key challenges of the income data
    1. Top coding
    2. Income ranges across countries and time

- Thus, a procedure is required to calculate average incomes in the top category i.e open-end categories at the very top (e.g. reported income is above a certain level, say 10.000 Euro, but there is no information on the highest income reported)

- Overall, income data given in ranges for all countries and the whole period

- **However:** A change in the questionnaire from questions on absolute income levels to income categories after 2012 $\rightarrow$ no income categories for three countries (HU, SRB, RO)
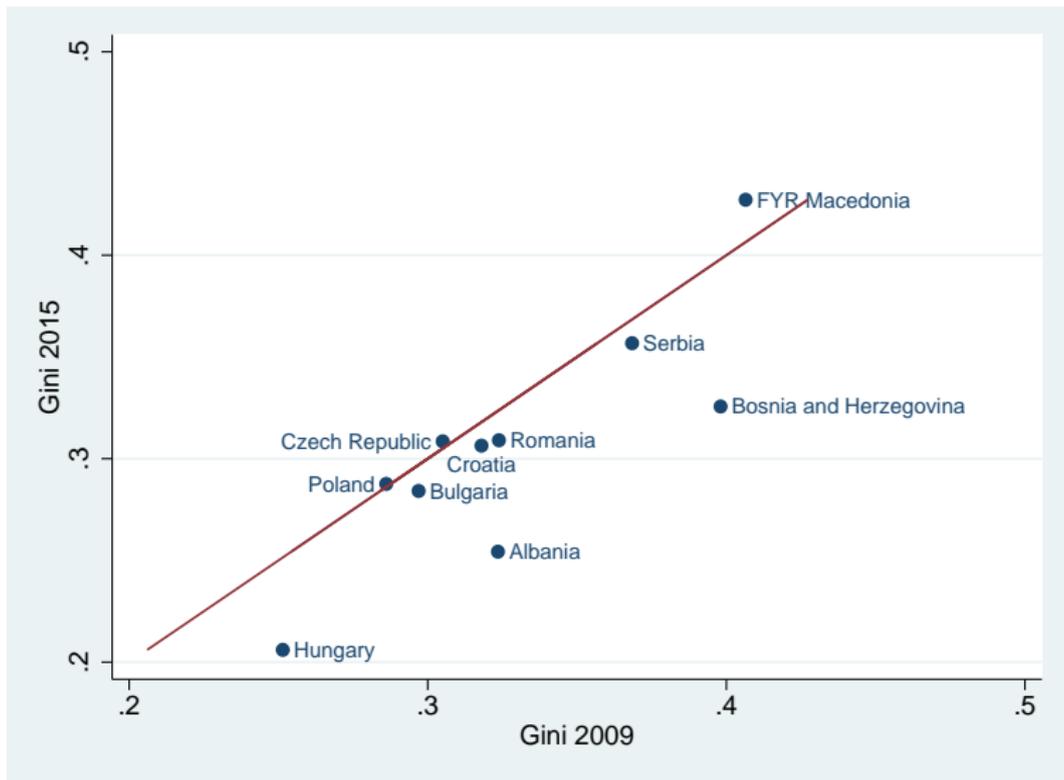
# Income data corrections - Top coding

- With income categories reported throughout all waves of the survey $\rightarrow$ upper boundaries to top income categories to calculate top-10% income shares in order to match respective shares based on EU-SILC or national data

- For HU, SRB, RO $\rightarrow$ linear extrapolation of a trend for the years after 2012

- Of course this is a simplifying assumption but, in our view, the best at hand

- In the case of Bosnia and Hercegovina, however, neither EU-SILC data nor national surveys are available to the best of our knowledge

- Hence, for BiH, we simply extend the range of the income category below the very top category to have an upper boundary which enables us to calculate average income in the top category in order to calculate the GINI-coefficient
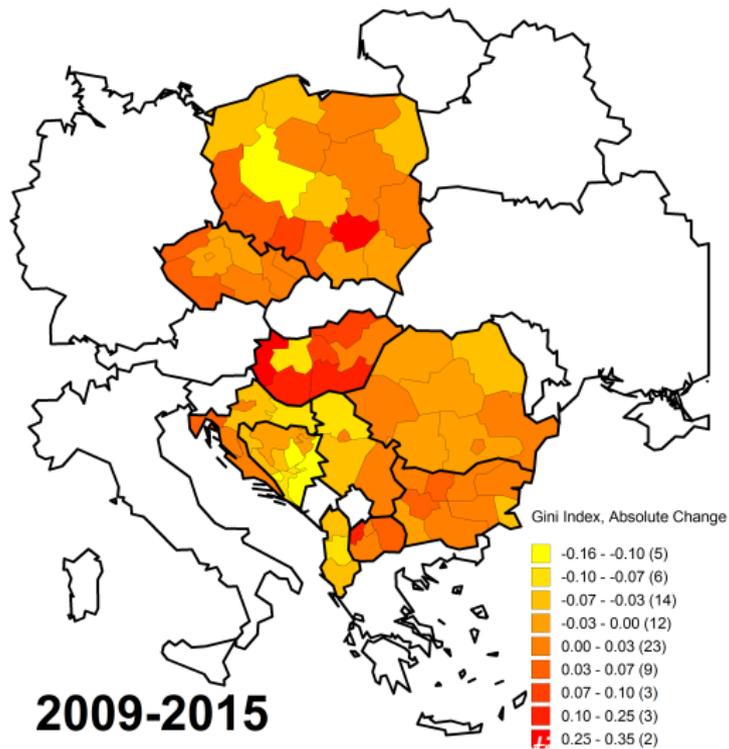
## Income data corrections - categories

- From 2012 onwards, some income categories have been split into two categories
- E.g. a (hypothetical) income category of 200-300 Euro may be split into a category covering income from 200-250 Euro and one from 251 to 300 Euro
- We re-merged the two categories into the previous range and estimated the model again to check for changes in the resulting regression coefficients
- However, the results remain the same with respect to size, sign and statistical significance
- This exercise constitutes a robustness check of our initial GINI calculations

Change of regional inequality

# Regional inequality - Gini coefficient



**2009-2015**

Gini Index, Absolute Change

- -0.16 - -0.10 (5)
- -0.10 - -0.07 (6)
- -0.07 - -0.03 (14)
- -0.03 - 0.00 (12)
- 0.00 - 0.03 (23)
- 0.03 - 0.07 (9)
- 0.07 - 0.10 (3)
- 0.10 - 0.25 (3)
- 0.25 - 0.35 (2)

# Correlation between Trust and Income Inequality
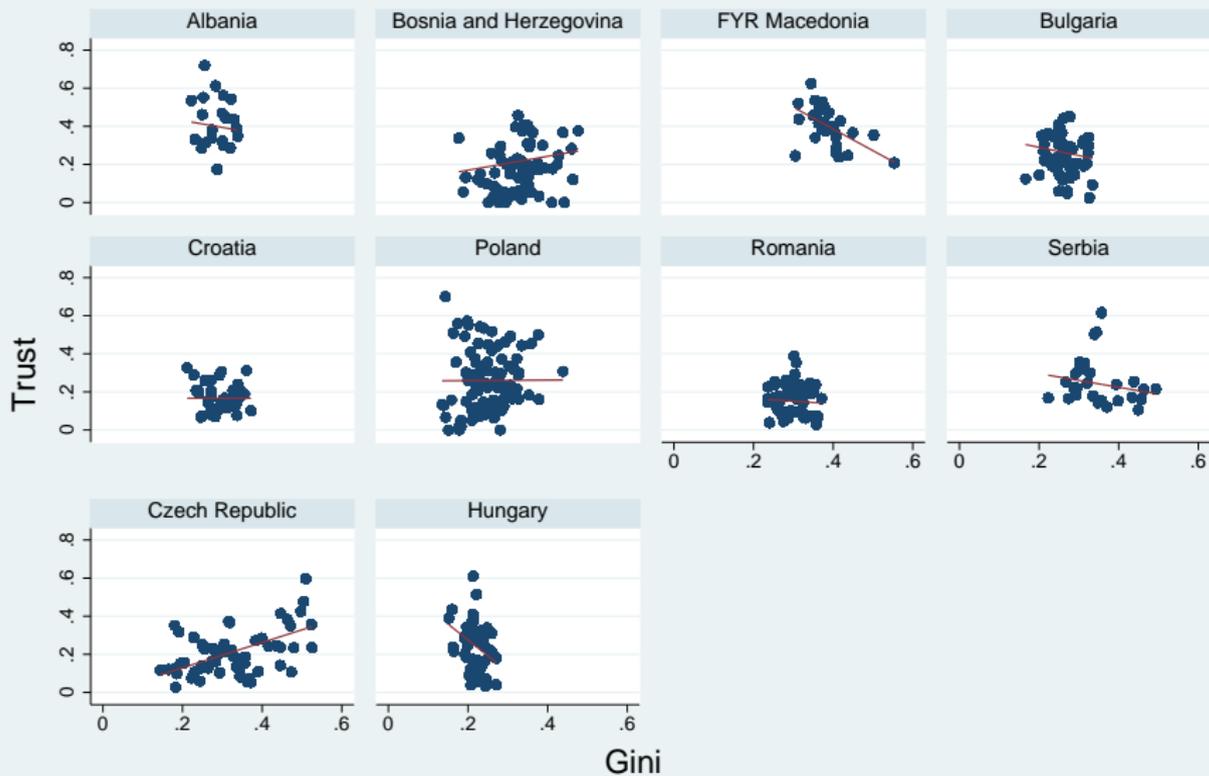


mean of trust in government per region and year ——— Fitted values

# Empirical Strategy

- We apply multilevel/nested models (e.g Rabe-Hesketh and Skrondal,2008),which accounts for the nested nature of the data.
- Three levels of nested clusters: country, region and individual levels and assume random effects at all levels of clusters.
- Why multilevel models?
  - systemic analysis of cross-level interaction
  - correction for biases of both parameters and standard errors
  - correction due to the violated independence assumption
- Thus, we consider a three-level model, where for a series of independent clusters at the country level and conditional on a set of fixed effects x and a set of random effects u

$$Pr(y_{ijk} = 1|x_{ijk}, u_j, u_k) = H(x_{ijk}\beta + z_{ijk}u_j + z_{ijk}u_k) \qquad (1)$$

$$Pr(trust = 1) = reggini_{jk} + \Pi_{ijk} + Sentiments_{ij} + Macrovars_k \qquad (2)$$

- with i=individuals (1,...,90000), j= regions (1,...,77), k=countries (1,...,10)
- Endogeneity regional aggregation, lagged variable

# Control variables

- Three income control variables: regional income GINI, individual relative income and income NA

- Sentiment questions: **expectations** for household financial situation , economic situation of the country; **memories** of periods of restricted deposits or high inflation

- Individual socio-demographic variables: age, employment status, education, gender, number of children, household size, religion

- Macroeconomic variables: GDP, GDP growth, inflation, unemployment rate, a dummy for EU membership but also *fiscal indicators, corruption index, business environment indicators, etc*

- Possible extensions: financial indicators such as financial development, stock market developments, etc.

# Baseline results

| | Sociodemographics | Sentiments | Overall trust | Religion |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Regional GINI | -.941** | -.346* | -.375* | -.367* |
| relative income | .024*** | .025*** | .025*** | .028*** |
| income NA | .117*** | .126*** | .123*** | .103** |
| Time FE | yes | yes | yes | yes |
| Regional FE | yes | yes | yes | yes |
| Fut econ situation | | 2.195** | | 2.037*** |
| Memories of inflation | | -.192* | | |
| Trust index | | | 3.031*** | |
| Atheist | | | | -.258*** |
| Christian catholic | | | | -.124** |
| Christian orthodox | | | | -.101* |
| Other | | | | -.186 |
| No obs | 96943 | 96943 | 96943 | 38673 |

# Baseline results

- Regional inequality and a better position in the regional income distribution are negatively correlated with institutional trust

- Refusal to specify income, correlates positively with trust

- (Positive) sentiments i.e expectations, related to the future economic situation of the country, or the financial situation of the household, (positively) correlate with trust

- Sentiments related to past experiences (i.e high inflation episodes) translate into a decrease in institutional trust

- Overall the regional trust level (i.e as expressed by a composite index) is positively correlated with institutional trust

- Better educated respondents or pensioners trust more

- People living in the main region i.e in the capital, trust less

- Muslims trust the most compared to respondents with other religion confessions

# Results II - Macrovariables

| | Business cycle | Rule of Law | EU membership | Corruption | Implied corr perception |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Regional GINI | -3.099*** | -.646** | -1.267*** | -2.372* | -.628* |
| relative income | .024*** | .024*** | .024*** | .024*** | .024*** |
| income NA | .118*** | .120*** | .108*** | .118*** | .102* |
| GDP pc | .0001*** | | | | |
| GDPpc*Reg GINI | .0001*** | | | | |
| Rule of Law | | -1.016** | | | |
| Rule of Law*Reg GINI | | 2.706*** | | | |
| EU membership | | | -.870*** | | |
| EU membership*Reg GINI | | | .866** | | |
| Corruption | | | | -.246 | |
| Corruption*Reg GINI | | | | .684 | |
| Implied corruption perception | | | | | -.231* |
| Time FE | yes | yes | yes | yes | yes |
| Country FE | yes | yes | yes | yes | yes |
| No obs | 96943 | 96943 | 96943 | 96943 | 48841 |

# Results with macroeconomic variables

- Respondents in countries with higher GDP per capita trust more

- With a stronger rule of law and enhanced property rights protection, rising income inequality does not lead to a decline in institutional trust

- Interestingly, respondents in EU member countries in general have less trust in national governments, while they also react less sensitive to an increase of income inequality

- Corruption indices do not prove to be a robust predictor of trust, while implied corruption puts a downward pressure on trust

# Results III-Robustness checks
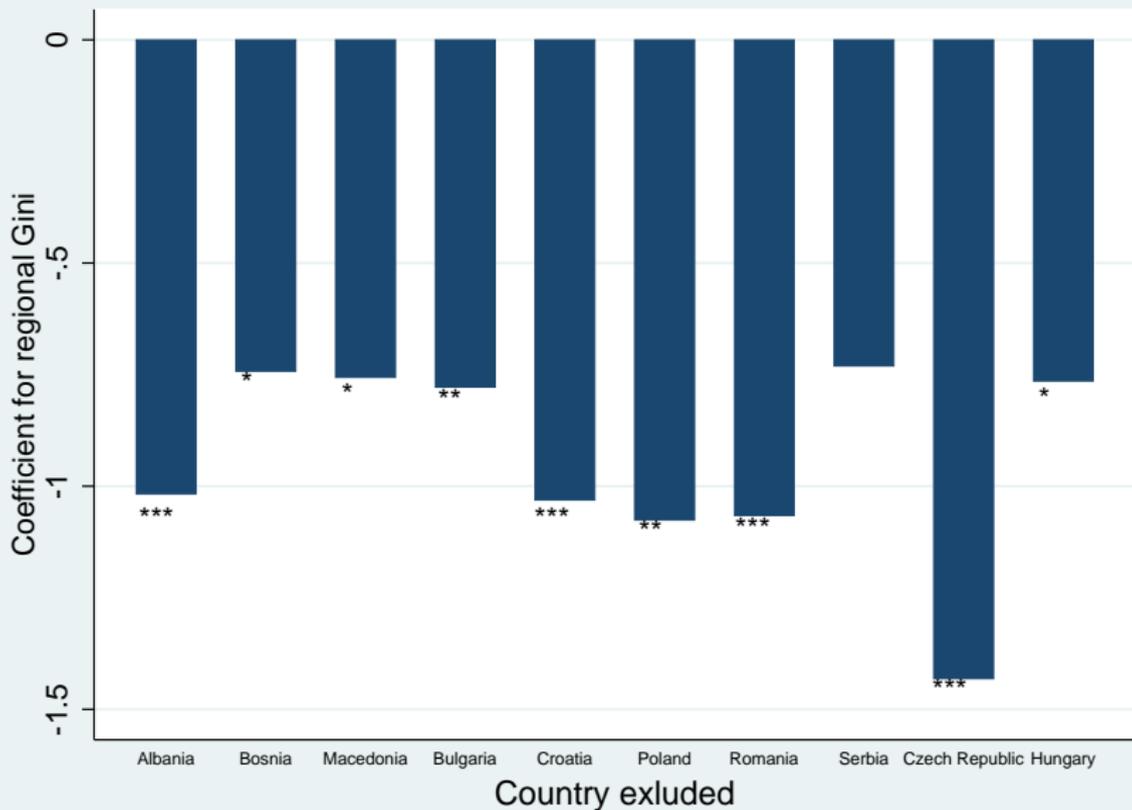
# Concluding remarks

- The importance of trust for economic and political outcomes remains an underinvestigated issue in economics and somewhat neglected, despite recent developments (e.g. Brexit, US-elections)

- Hence, the determinants of trust are relevant as well. The effect of rising income inequality on institutional trust, however, is rarely investigated, in particular for CESEE-countries

- This study finds that rising income inequality on the regional level lowers individual trust in national governments in spite of slightly decreasing income inequality in our sample

- The regional dimension of income distribution is particularly important, as aggregate measures of income inequality may disguise underlying divergences

- Our results call for measures to improve the relative position of low-income earners and reduce overall inequality

- Increasing the credibility of government policies is important to strengthen trust in governments, in particular in EU member countries

Thank you for your attention!

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