Replication of a research claim from Lindqvist and Östling (2010) in *American Political Science Review*

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Claim Summary: The claim selected for replication from Lindqvist & Östling (2010) is that the correlation between polarization and government size is significantly stronger among democratic countries; the association between polarization and government size in strong democracies is the specific part of the finding selected for the SCORE program. This reflects the following statement from the paper's abstract: "Political polarization is strongly associated with smaller government in democratic countries, but there is no relationship between polarization and the size of government in undemocratic countries." The analysis relies on a regression of government size (general government consumption as a fraction of total consumption, averaged from 2003-2005) on the standard deviation of four World Values Survey items measuring various economic aspects of left and right on a 1-10 scale, in four separate models. The authors estimate a regression for each of these measures in the paper; the SCORE program has selected the 1-10 scale where 1 means complete agreement that "Private ownership of business should be increased" and 10 means complete agreement that "Government ownership of business and industry should be increased." In the 'long' specification chosen for the SCORE program, the authors control for the mean value of responses, along with geographic and colonial controls, and an additional set of potentially endogenous control variables. The authors split their sample such that countries with a Polity IV democracy score of 9 to 10 are strong democracies, while countries with scores 0 to 8 are weak democracies. The evidence selected for the SCORE program is the regression estimated on the strong democratic sample using the measure of polarization specified above (results are significant using three of the four measures in the paper with this specification).

Replication Criteria: Criteria for a successful replication attempt for the SCORE project is a statistically significant effect (alpha = .05, two tailed) in the same pattern as the original study on the focal hypothesis test (H*). For this study, this criteria is met by a negative and significant coefficient on the term for polarization in the focal regression model.

Replication Results:

- **Waves 5 and 6 Only (28 observations):** The replication included 28 countries in the analytic sample, which is just short of the desired sample size for stage 1 data collection (n = 30). There was no significant effect of the standard deviation of responses to the question on government ownership (i.e., polarization) on average government consumption as a fraction of total consumption between 2010–2014 (coefficient: -2.91; standard error: 3.45; p-value: 0.42, two-tailed). Thus, this replication of the claim was *unsuccessful* according to the SCORE criteria.

- **Waves 5, 6, and 7 (30 observations):** The replication included 30 countries in the analytic sample, which acheives the desired sample size for stage 1 data collection (n = 30). There was no significant effect of the standard deviation of responses to the question on government ownership (i.e., polarization) on average government consumption as a fraction of total consumption between 2010–2014 (coefficient: -2.57; standard error: 3.15; p-value: 0.43, two-tailed). Thus, this replication of the claim was *unsuccessful* according to the SCORE criteria.

Deviations from Preregistration: In order to achieve a desired sample size of 30 observations, we obtained supplementary data for Trinidad and Tobago that was not originally included in the preregistration. Specifically, we computed the 2010 trade share of GDP (112.2845) using data from https://oec.world/en/profile/country/tto and https://data.worldbank.org/indicator/NY.GDP.MKTP.KD?locations=TT, and we computed the average 'General government final consumption expenditure' as a share of total GDP between 2010 and 2014 (10.1) using data from https://unstats.un.org/unsd/snaama/CountryProfile.

Also, the Polity5 series was used instead of the Polity IV version for democracy scores.

Description of Materials Provided:

Instructions: To run the entire analysis,

1. Unzip the Data/replication.zip folder.

2. Place all additional data inputs into the /raw/ folder as outlined in the codebook.pdf.

3. Run 'Rscript source/build_data.R' from the root of the unzipped replication.zip archive.

4. Run 'Rscript source/analyze.R' from the root of the unzipped replication.zip archive.

5. The data and regression output will now be in the /output/ folder contained within the unzipped replication.zip archive.

A list of relevant files:

- preregistration.pdf — Contains the preregistration information for the study.

- Power Analysis/POWER_LINDQVIST_AmPoliSCiRev_2010_OeGv.zip — Contains the code and documentation for the power calculations related to the study.

- Data/replication.zip

  - codebook.pdf — Contains a description of the variables in the data output, along with the raw files used as inputs. Also includes instructions for the required data inputs that are not included due to terms of use restrictions.

  - /raw/ — Contains the raw files that do not have terms of use restrictions.

  - /output/ — Where the output is stored after the code is run.

    * data.csv — The constructed data file.
    * real_drop_7.txt — The main regression results when *excluding* data from WVS wave 7.
    * real_keep_7.txt — The main regression results when *including* data from WVS wave 7.
    * test_drop_7.txt — The main regression results when *excluding* data from WVS wave 7, *and randomizing the data columns for testing purposes*.
    * test_keep_7.txt — The main regression results when *including* data from WVS wave 7, *and randomizing the data columns for testing purposes*.

  - /source/build_data.R — The script used to build the main data file.

  - /source/analyze.R — The script used to run the regressions on the constructed data file.

Data Sources Used:

See code for exact details on data construction.

- Polity5 Annual Time-Series (p5v2018) from https://www.systemicpeace.org/polityproject.html.

- Country covariates from Persson and Tabellini (2003). See http://didattica.unibocconi.it/mypage/index.php?IdUte=48805&idr=4273.

- OECD membership from https://www.oecd.org/about/document/list-oecd-member-countries.htm

- Trinidad and Tobago supplementary data from:

- – https://oec.world/en/profile/country/tto
  - – https://data.worldbank.org/indicator/NY.GDP.MKTP.KD?locations=TT
  - – https://unstats.un.org/unsd/snaama/CountryProfile

- • World Bank Indicators:

  - – General government final consumption expenditure (% of GDP): NE.CON.GOVT.ZS
  - – Exports of goods and services (% of GDP): NE.EXP.GNFS.ZS
  - – Imports of goods and services (% of GDP): NE.IMP.GNFS.ZS
  - – GDP per capita (current US$): NY.GDP.PCAP.CD
  - – Population ages 65 and above (% of total population): SP.POP.65UP.TO.ZS
  - – Population ages 15-64 (% of total population): SP.POP.1564.TO.ZS

- • World Values Surveys from waves 5 (v20180912), 6 (v20180912), and 7 (v20200720) available at http://www.worldvaluessurvey.org/wvs.jsp.

Citations:

Lindqvist, Erik and Robert Östling. 2010. Political polarization and the size of government. *American Political Science Review.* 104(3): 543–565.

Persson, Torsten, and Guido Tabellini. 2003. *The Economic Effects of Constitution*s. MIT Press.