

Replication Documentation: OECD States of Fragility 2015

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Section 0: Github contents

Documents

StatesofFragility2015post – Word document of the original write-up

StatesofFragility2015replication.doc – Word document describing the replication (same as README)

Replication Script

StatesofFragility2015replication.R – R script used for replication

Replication datasets

indice_values – average score for each dimension from the scaleddata, along with the countries rank from 1 to 183 with 1 being the most vulnerable.

results_comparison – replication results with binary indicator of vulnerability in the five dimensions merged with the original report findings.

reported_fragility – OECD's original Venn diagram of fragility in dataset form.

scaled_data – The 15 inputs after being scaled from 0 to 100. Small countries, territories, and countries missing over 10 inputs were dropped.

unscaled_inputs – The 15 variables, raw values.

Raw Indicators – see details in next section

Birth_registration_Oct2014_135

GHE_DALY_2012_country

healthcarecapabilities

WEOOct2014all

wgiestimates

wgiestimates2012

worldriskindex

Section 1: Data Inputs

Note: for each dataset I use the R package [countrycode](#) to get consistent country names.

Violence: UCDP battle deaths

Uppsala University (2014), Dataset, v.5-2014, 1989-2013, Conflict Data Program, Uppsala University, Uppsala, Sweden, available at: www.pcr.uu.se/research/ucdp/datasets/ucdp_battle-related_deaths_dataset (accessed 1 August 2014).

Loaded directly from http://www.pcr.uu.se/digitalAssets/124/124934_1ucdpbattle-relateddeathsdatasetv.5-2014dyadic.rdata. For each state I add the best estimate of battle deaths for each conflict where the state was listed as Side A (except for Syria, where only a “low estimate” is given for 2013). I change the name of “Yemen Arab Republic” to “Yemen”.

Violence: Interpersonal Injuries

WHO (2014), “Health statistics and information systems: Estimates for 2000-12, Disease burden”, in Global Health Estimates, World Health Organization, Geneva, available at: www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html (accessed 1 August 2014).

Downloaded from

http://www.who.int/entity/healthinfo/global_burden_disease/GHE_DALY_2012_country.xls, saved as GHE_DALY_2012_country. I pull out sheet 2, row 157 (becomes row 156 when loaded into R). I change “Democratic People's Republic of Korea” to “North Korea”.

Violence: Political Instability

World Bank (2014a), Worldwide Governance Indicators 1996-2013, World Bank, Washington, DC, <http://info.worldbank.org/governance/wgi/index.aspx> (accessed 1 August 2014).

Downloaded from <http://info.worldbank.org/governance/wgi/wgidataset.xlsx>. Columns “CC” and “CI” give the best estimates for 2012 and 2013. These columns were pulled along with the country names column and saved as the csv files wgiestimates and wgiestimates2012.

Justice: Birth Registration

UNICEF (2014), “UNICEF data: Monitoring the situation of women and children”, available at: <http://data.unicef.org/child-protection/birth-registration>.

Downloaded from

http://data.unicef.org/download.php?file=Birth_registration_Oct2014_135.xlsx&type=topics.

Download saved as Birth_registration_Oct2014_135. The data currently available was updated November 2014, and no archive is readily available. 6 countries use data from after 2013 or 2012-2013: Madagascar, Pakistan, Senegal, Georgia, Nigeria, Vanuatu. I change “Democratic People's Republic of Korea” to “North Korea”.

Justice: Control of Corruption

Justice: Rule of Law

Institutions: Government Effectiveness

Institutions: Regulatory Quality

Institutions: Voice and Accountability

These are all from the same excel file as Violence: Political Instability on different sheets. The same procedure is used for each.

Economic Foundations: Doing Business Index:

World Bank (2013), Doing Business 2013, World Bank, Washington, DC, available at: www.doingbusiness.org/rankings.

Downloaded using the R package [WDI](#) for indicator IC.BUS.EASE.XQ. To remove the regional entries, I drop rows that are unmatched after using CountryCode. Two entries for “Sub-Saharan Africa” must be dropped explicitly since CountryCode translates them to “Western Sahara”. Both 2013 and 2014 are now available. There is no data before 2013.

Economic Foundations: Education Years

Barro, R. and J.-W. Lee (2010), “A new data set of educational attainment in the world, 1950-2010”, Journal of Development Economics, Vol. 104, pp. 184-198, accessed at: www.barrolee.com.

Downloaded using the R package [WDI](#) for indicator BAR.PRM.SCHL.15UP. Data is available every five years, including 2010.

Economic Foundations: GDP Growth – ten year average

IMF (2014), World Economic Outlook Database, Washington, DC, available at: www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx.

Downloaded from <http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/WEOOct2014all.xls>, saved as WEOOct2014all. I use annual percent change in constant price GDP (WEO Subject Code NGDP_RPCH). The dataset contains data up to 2013 for 116 countries, but some stop sooner. Djibouti’s last year for actual data is from 1999; no last year is given for Bhutan. For all cases, estimates are made up through 2019.

For each country, take the ten years before estimates begin and average the GDP Growth for those years, dropping any missing years. For Bhutan I assume the last year with data is 2012.

Resilience: Income Inequality- last year of gini measure ranges widely

International Futures (IFs) model (2014), Version 7.08, Frederick S. Pardee Center for International Futures, Josef Korbel School of International Studies, University of Denver, Denver, Colorado, www.ifs.du.edu

Downloaded using the R package [WDI](#) for indicator SI.POV.GINI. I take the most recent value for each country.

Resilience: Healthcare Capabilities – made myself from a map

US National Intelligence Council (2008), “Strategic implications of global health”, www.dni.gov/files/documents/Special%20Report_ICA%20Global%20Health%202008.pdf; National Center for Medical Intelligence, Health-Care Capabilities, Data are available in form of a map at: www.dni.gov/files/documents/Special%20Report_ICA%20Global%20Health%202008%20foldout.pdf.

I record the scores for each country based on their color on the map at www.dni.gov/files/documents/Special%20Report_ICA%20Global%20Health%202008%20foldout.pdf. Saved as healthcarecapabilities.

Resilience: Vulnerability

UNU-EHS (2014), World Risk Report 2014, United Nations University Institute for Environment and Human Security, Bonn, Germany, available at: www.ehs.unu.edu/article/read/world-risk-report-2014.

The WorldRiskIndex is taken from page 63 of <http://www.ehs.unu.edu/file/get/11895.pdf>. Data is saved as worldriskindex.

Section 2: Methodology

For each goal proposed by the OWG, the authors designed a separate index, ranked all states and economies for which data were available (2012 data or most recent year), and identified the 50 most vulnerable ones. For each goal proposed by the OWG, the authors designed a separate index. Each index is based on three datasets for each cluster (Table A.2 summarizes the indicators and goal areas linked to each ranking). Each dataset was then rescaled to a scale from 0 to 100. The index is the average of these three numbers. Using this index, country lists were sorted from worst to best performing, and the 50 lowest performing countries and economies for each index are considered “vulnerable” or “challenged” in that area. (OECD 2015, pp 103-104)

For each of the 15 datasets, I rescale the data by subtracting the minimum value, dividing by the resulting maximum value, and multiplying by 100. The formula looks like this:

$$X_{scaled} = 100 * (X_{original} - X_{min}) / (X_{max} - X_{min})$$

For each of the five clusters, I average the three scaled values. I then identify the 50 lowest performing countries and check which countries are “vulnerable” in two or more clusters.

There is no discussion of missing values. I continue through the scaling and averaging simply disregarding missing values. I drop all countries that are missing more than 10 of the 15 values. Some countries end up unranked for some clusters where they are missing all three inputs, but this seems limited to small island countries.

There is also no discussion about what does and does not constitute a country. Small island countries Kiribati and São Tomé and Príncipe are included as is state de jure Palestine under the name “West Bank and Gaza Strip.” In my replication, I drop all those countries that could be considering territories or have a smaller population than Kiribati since it brings me closer to the OECD’s results. The countries dropped are listed below:

Small Countries

American Samoa	Andorra	Anguilla
Antigua And Barbuda	Cayman Islands	Dominica
Greenland	Grenada	Jersey
Liechtenstein	Marshall Islands	Micronesia, Federated States of
Monaco	Nauru	Netherlands Antilles
Palau	Saint Kitts And Nevis	Saint Lucia
San Marino	Seychelles	Tonga
Tuvalu	Vanuatu	Virgin Islands, U.S.

Territories

American Samoa	Anguilla	Aruba
Cayman Islands	Greenland	Guam
Hong Kong	Jersey	Macao
Martinique	Netherlands Antilles	Puerto Rico
Reunion	Taiwan, Province Of China	Virgin Islands, U.S."

The directions to use “2012 or most recent year” can be interpreted in a few ways. The most obvious is using Price-is-Right-Rules - closest to 2012 without going over. Another way is to use the most recent year available in the cited dataset. The following datasets as cited have data available after 2012:

Battle Deaths: 2012 and 2013 (2014 is cited)

WGI estimates: 2012 and 2013 (2014 is cited)

Doing Business: 2013 and 2014 (2013 is cited)

GDP Growth: 2012 or 2013 (2014 citation) (year listed is possible final year for 10-year-average)

I find that using the most recent data results in fewer edits, so I use those results for my analysis.

Section 3: Results

Specifications:

- Most recent available year
- Dropping small countries and territories
- Dropping countries with more than 10 missing inputs
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Out of 70 states shown on the fragility clusters in the OECD report, my results match perfectly for 24 countries.

States Added: 6	States Removed: 10
Brazil China Egypt Gabon North Korea Philippines	Honduras India Kiribati Lao People's Democratic Republic Lesotho Panama Paraguay Rwanda Sao Tome and Principe Sierra Leone