

ONLINE APPENDIX TO "HOW (NOT) TO MEASURE DEMOCRACY"  
Vanessa A. Boese

## A Factor Analysis of the Polity2 Index components:

Coppedge et al. (2008) carry out a factor analysis for four of the components (parcomp, xropen, xrcomp and xconst) as well as several other measures of democracy. They find evidence for two latent factors - contestation and participation. In their analysis xropen contributes to the inclusiveness/participation factor while the other components are associated with the contestation factor. The results of their analysis might be misleading insofar as Democ, Autoc and Polity Index are not made up of the actual values of the respective components. Due to the intricate weighing and aggregation scheme the indices are sums of the scores on each the components categories. Hence, I created score variables capturing the actual value which is contributed to the Polity Index and carried out an exploratory factor analysis on them. The results for the factor analysis using the score variables are displayed in Table 11. One latent factor explains 95.86% of the variation the Polity Index's components - contestation (or, as Munck and Verkuilen put it: the procedure by which the executive office is filled). These findings in combination with the absence of any suffrage/inclusiveness requirement suggest that the Polity Index in fact is a measure of political contestation rather than democracy - even if one embraces the minimalist democracy definition with contestation and participation.

Table 11: Factor analysis results for the score variables of Polity's five components

Factor	Eigenvalue	Proportion
1	3.56	0.9586
2	0.36	0.0981
3	-0.01	-0.0038
N=	17,228	

Variable: scores of...	Factor Loadings (Factor 1)	Uniqueness	KMO
...xrcomp	0.8969	0.1955	0.7771
...xropen	0.8337	0.3050	0.7778
...xconst	0.8039	0.3537	0.9209
...parcomp	0.8504	0.2768	0.7833
...parreg	0.8314	0.3087	0.7925
		Overall:	0.8055

## B Checklist of questions and respective scores for the components of the Freedom House Index

Table 12: Checklist for the Freedom House Index. Source: Freedom House Methodology Website, House (2017)

Score	Political Rights	Score	Civil Liberties
0-12 points	<b>A. Electoral Process</b> <ol style="list-style-type: none"> <li>1. Is the head of government or other chief national authority elected through free and fair elections?</li> <li>2. Are the national legislative representatives elected through free and fair elections?</li> <li>3. Are the electoral laws and framework fair?</li> </ol>	0-16 points	<b>D. Freedom of Expression and Belief</b> <ol style="list-style-type: none"> <li>1. Are there free and independent media and other forms of cultural expression? (<i>Note:</i> In cases where the media are state controlled but offer pluralistic points of view, the survey gives the system credit.)</li> <li>2. Are religious institutions and communities free to practice their faith and express themselves in public and private?</li> <li>3. Is there academic freedom, and is the educational system free of extensive political indoctrination?</li> <li>4. Is there open and free private discussion?</li> </ol>
0-16 points	<b>B. Political Pluralism and Participation</b> <ol style="list-style-type: none"> <li>1. Do the people have the right to organize in different political parties or other competitive political groupings of their choice, and is the system open to the rise and fall of these competing parties or groupings?</li> <li>2. Is there a significant opposition vote and a realistic opportunity for the opposition to increase its support or gain power through elections?</li> <li>3. Are the people's political choices free from domination by the military, foreign powers, totalitarian parties, religious hierarchies, economic oligarchies, or any other powerful group?</li> <li>4. Do cultural, ethnic, religious, or other minority groups have full political rights and electoral opportunities?</li> </ol>	0-12 points	<b>E. Associational and Organizational Rights</b> <ol style="list-style-type: none"> <li>1. Is there freedom of assembly, demonstration, and open public discussion?</li> <li>2. Is there freedom for nongovernmental organizations? (<i>Note:</i> This includes civic organizations, interest groups, foundations, etc., with an emphasis on those engaged in human rights- and governance-related work.)</li> <li>3. Are there free trade unions and peasant organizations or equivalents, and is there effective collective bargaining? Are there free professional and other private organizations?</li> </ol>
0-12 points	<b>C. Functioning of Government</b> <ol style="list-style-type: none"> <li>1. Do the freely elected head of government and national legislative representatives determine the policies of the government?</li> <li>2. Is the government free from pervasive corruption?</li> <li>3. Is the government accountable to the electorate between elections, and does it operate with openness and transparency?</li> </ol>	0-16 points	<b>F. Rule of Law</b> <ol style="list-style-type: none"> <li>1. Is there an independent judiciary?</li> <li>2. Does the rule of law prevail in civil and criminal matters? Are police under direct civilian control?</li> <li>3. Is there protection from political terror, unjustified imprisonment, exile, or torture, whether by groups that support or oppose the system? Is there freedom from war and insurgencies?</li> <li>4. Do laws, policies, and practices guarantee equal treatment of various segments of the population?</li> </ol>
(0-4 points)	<b>Additional Discretionary Political Rights Questions</b> <ol style="list-style-type: none"> <li>A. For traditional monarchies that have no parties or electoral process, does the system provide for genuine, meaningful consultation with the people, encourage public discussion of policy choices, and allow the right to petition the ruler?</li> </ol>	0-16 points	<b>G. Personal Autonomy and Individual Rights</b> <ol style="list-style-type: none"> <li>1. Do individuals enjoy freedom of travel or choice of residence, employment, or institution of higher education?</li> <li>2. Do individuals have the right to own property and establish private businesses? Is private business activity unduly influenced by government officials, the security forces, political parties/organizations, or organized crime?</li> <li>3. Are there personal social freedoms, including gender equality, choice of marriage partners, and size of family?</li> <li>4. Is there equality of opportunity and the absence of economic exploitation?</li> </ol>
(-4 to 0 points)	<ol style="list-style-type: none"> <li>B. Is the government or occupying power deliberately changing the ethnic composition of a country or territory so as to destroy a culture or tip the political balance in favor of another group?</li> </ol> <p><b>Note:</b> For additional discretionary question A, a score of 1 to 4 may be added, as applicable, while for discretionary question B, a score of 1 to 4 may be subtracted, as applicable (the worse the situation, the more points may be subtracted).</p>		
Total	0 - 40 points	With the two discretionary questions the highest possible score remains 40, but the lowest possible score is -4.	0 - 60 points

## C Setup of V-Dem's Electoral Democracy Index (Polyarchy)

Table 13: Setup of the Electoral Democracy (Polyarchy) Index. The information displayed here is gathered from the V-Dem Codebook, Coppedge, Gerring, Lindberg, Skaaning, Teorell, Altman, Andersson, Bernhard, Fish, Glynn et al. (2017), p.49 - 59 and p. 435-436.

Electoral Democracy Index, **v2x\_polyarchy**,

*Question: To what extent are rulers responsive to citizens?(...) [It is] achieved through electoral competition for the electorate's approval under circumstances when suffrage is extensive; political and civil society organizations can operate freely; elections are clean and not marred by fraud or systematic irregularities; and elections affect the composition of the chief executive of the country. In between elections, there is freedom of expression and an independent media capable of presenting alternative views on matters of political relevance.*

*The aggregation is done at the level of Dahl's sub-components (with the one exception of the non-electoral component). The index is aggregated using this formula:*

$$v2x\_polyarchy = \frac{1}{2}v2x\_api + \frac{1}{2}v2x\_mpi$$

### Mid-Level Indices:

Additive Polyarchy Index, **v2x\_api**

Multiplicative polyarchy index, **v2x\_mpi**

*Question: To what extent is the electoral principle of democracy achieved?*

*Clarification: The electoral principle of democracy seeks to achieve responsiveness and accountability between leaders and citizens through the mechanism of competitive elections. This is presumed to be achieved when suffrage is extensive; political and civil society organizations can operate freely; elections are clean and not marred by fraud or systematic irregularities; and the chief executive of a country is selected (directly or indirectly) through elections.*

$$v2x\_api = \frac{1}{4}v2x\_frassoc\_thick + \frac{1}{4}v2xel\_frefair + \frac{1}{4}v2x\_freexp\_thick + \frac{1}{4}\left(\frac{1}{2}v2x\_elecoff + \frac{1}{2}v2x\_suffr\right)$$

$$v2x\_mpi = v2x\_frassoc\_thick \cdot v2xel\_frefair \cdot v2x\_freexp\_thick \cdot \dots \cdot v2x\_elecoff \cdot v2x\_suffr$$

### Low-Level Indices:

Freedom of expression index, <b>v2x_freexp_thick</b>	Freedom of association index, <b>v2x_frassoc_thick</b>	Clean elections index, <b>v2xel_frefair</b>	Elected official index, <b>v2x_elecoff</b>	Share of population with suffrage, <b>v2x_suffr</b>
Type A (factual), B and C (expert coded) variables				
Government censorship effort of media, Harassment of journalists, Media self-censorship, Media bias, Print/broadcast media critical, Print/broadcast media perspectives; Freedom of discussion for men; Freedom of discussion for women; Freedom of academic and cultural expression)	Party ban, Barriers to parties, Opposition parties autonomy, Elections multiparty, civil society entry and exit, civil society repression	EMB autonomy, EMB capacity, Election voter registry, Election vote buying, Election other voting irregularities, Election government intimidation, Election other electoral violence, Election free and fair	Legislature bicameral, Lower chamber elected, Upper chamber elected, Legislature dominant chamber, head of state(HOS) selection by legislature in practice, HOS appointment in practice, HOG selection by legislature in practice, HOG appointment in practice, HOS appoints cabinet in practice, HOG appoints cabinet in practice, HOS dismisses ministers in practice, HOG dismisses ministers in practice, HOS = HOG? Chief executive appointment by upper chamber, Chief executive appointment by upper chamber explicit approval	Percent of population with suffrage

## D Derivation of the Polyarchy Index' rate of influence

$$\text{democracy index} = \frac{1}{4} \cdot (\text{polyarchy}^{1.6} + \text{component index}) + \frac{1}{2} \cdot \text{polyarchy}^{1.6} \cdot \text{component index} \quad (1)$$

The polyarchy index influences each high level democracy index to the power of 1.6. The intuition behind this rate is explained in the V-Dem Methodology V7 paper, Coppedge, Gerring, Lindberg, Skaaning, Teorell, Krusell, Marquardt, Mechkova, Pemstein, Pernes et al. (2017), p.10: "when a country has a polyarchy score of .5 (in practice, this is a threshold on the Electoral Democracy Index beyond which countries tend to be considered electoral democracies in a minimal sense) and its HPC<sup>113</sup> is at its maximum (1), the high level index score should be .5".

$$0.5 = \frac{1}{4} \cdot (0.5^x + 1) + \frac{1}{2} \cdot 0.5^x \cdot 1 \rightarrow x \approx 1.6 \quad (2)$$

This benchmark case is shown in equation 1. Solving for x yields a rate of close to 1.6. Intuitively, setting a higher rate of influence for polyarchy than any of the other component indices reflects a notion of democracy being a question of kind before one of degree. The principles of contestation and participation should be satisfied to a certain degree before further aspects of democracy can be employed to distinguish between regime types.

## E Summary statistics for the V-Dem democracy measures

Summary statistics for...						
...all observations available per index						
Democracy Index:	Obs.	Mean	Median	St. D.	Min	Max
Polyarchy (Electoral)	17,036	0.318	0.206	0.279	0.009	0.947
Liberal	17,035	0.260	0.151	0.246	0.009	0.916
Participatory	17,035	0.192	0.105	0.193	0.005	0.814
Deliberative	17,035	0.209	0.068	0.262	0.000	0.913
Egalitarian	17,036	0.242	0.148	0.232	0.011	0.890

...the trunk dataset						
Index:	Obs.	Mean	Median	St. D.	Min	Max
Polyarchy (Electoral)	6,546	0.455	0.406	0.287	0.014	0.947
Liberal	6,546	0.354	0.260	0.279	0.010	0.916
Participatory	6,546	0.279	0.212	0.210	0.007	0.814
Deliberative	6,546	0.330	0.236	0.294	0.001	0.913
Egalitarian	6,546	0.356	0.260	0.249	0.032	0.890

Table 14: Summary Statistics for V-Dem democracy measures for all observations available (left) and observations in the trunk dataset (right).

<sup>113</sup>HPC refers to High Principle Component (here: component index).

## F Regression of difference between democracy measures on "hypothetical democracy"

Dep. Var.:	Polity2 - Polyarchy Coeff.	Polity2 - FHI Coeff	FHI-Polyarchy Coeff
hypothetical democracy	0.2326*** (0.0055)	0.0857*** (0.0064)	0.1469*** (.0049)
constant	-0.0040 (0.0033)	0.0120*** (0.0038)	-0.0241*** (.0029)
<i>R</i>	0.2175	0.0266	0.1252
N	6,546	6.546	6,546

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$

Table 15: Regression results for Regression of difference between democracy measures on "hypothetical democracy". Pooled OLS, standard deviation in parenthesis below.  
 Independent variable: "hypothetical democracy" :=  $\frac{(Polity2+FHI+Polyarchy)}{3}$

## G Description of the democracy measures' distribution

Figure 12: Histogram of the normalized democracy measures in trunk dataset

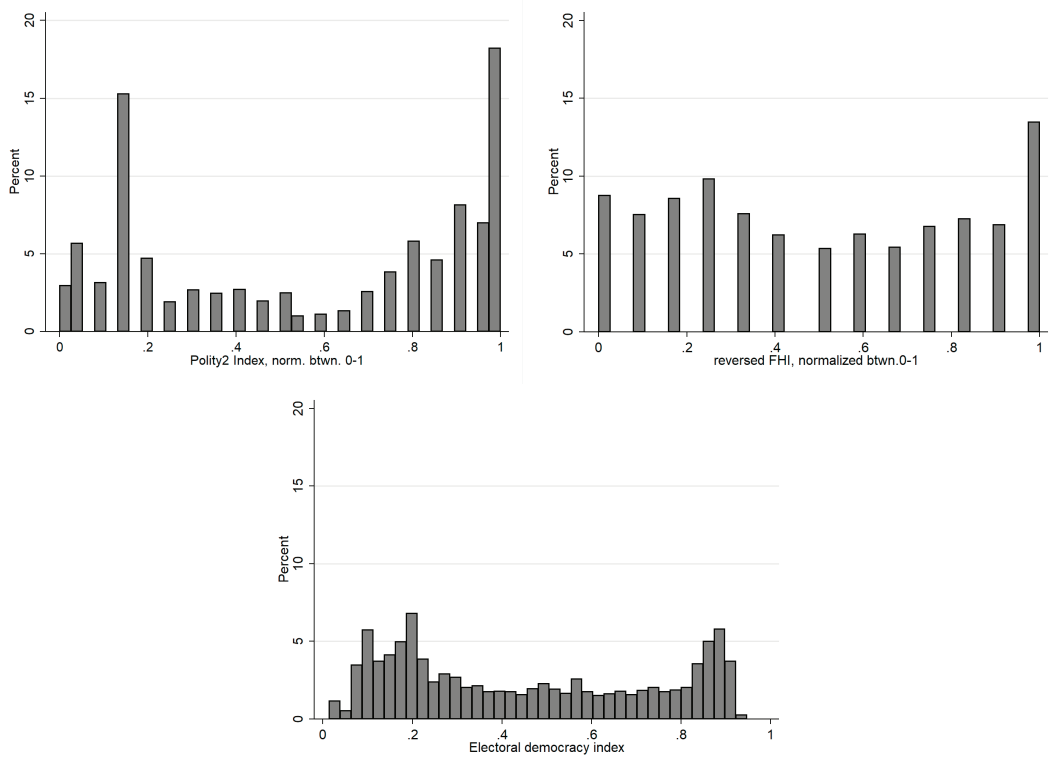
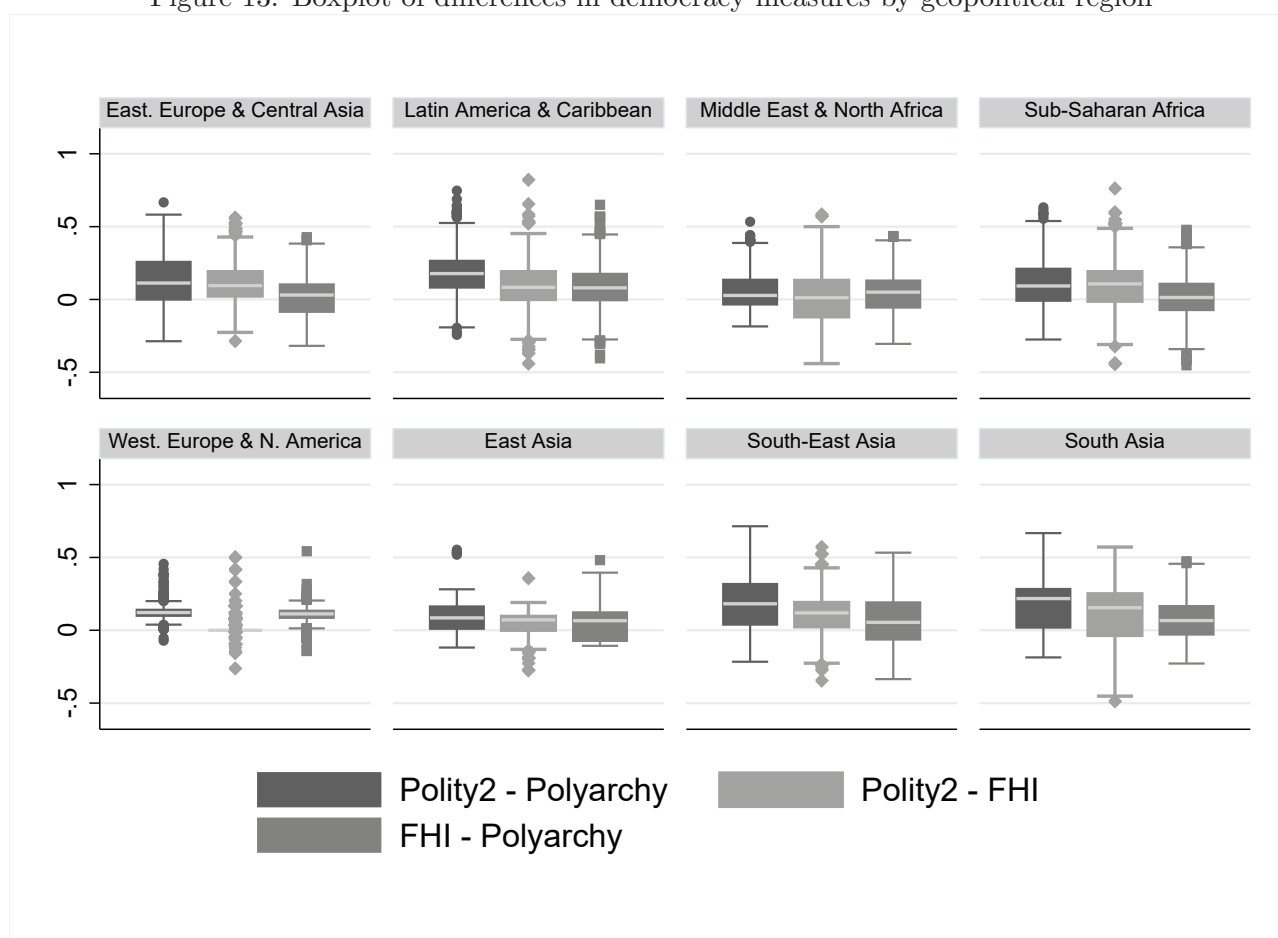


Table 16: Percentiles for Polity2 (normalized between 0-1), Polyarchy and FHI (reversed and normalized between 0-1) in trunk dataset

	Polity2		Polyarchy		FHI	
	Percentiles	Smallest	Percentiles	Smallest	Percentiles	Smallest
1%	0	0	0.0257	0.0140	0	0
5%	0.05	0	0.0858	0.0140	0	0
10%	0.1	0	0.1069	0.0140	0.0833	0
25%	0.15	0	0.1911	0.0140	0.2500	0
50%	0.7		0.4061		0.5	
		Largest		Largest		Largest
75%	0.95	1	0.7380	0.9335	0.8333	1
90%	1	1	0.8725	0.9357	1	1
95%	1	1	0.8912	0.9448	1	1
99%	1	1	0.9103	0.9471	1	1

Figure 13: Boxplot of differences in democracy measures by geopolitical region



## H Examining differences in regional codings and rankings

To examine the distribution of the differences between the index values a boxplot by region is provided in Figure 13. Polity2 mostly assigns higher values than the other indices, followed by the FHI. The interquartile range of the differences between Polity2 and the other two indices is non-negative for all regions except MENA and South Asia (for Polity2 - FHI). There is a very high level of agreement between all indices for Western Europe and North America (the differences are mostly positive but close to 0). All indices also display a high level of agreement for East Asia. The picture for differences between FHI and Polyarchy is mixed, although the FHI mostly assigns larger values than the Polyarchy Index (median differences are positive for all regions, interquartile range non-negative for Latin America & the Caribbean, Western Europe & North America).

### H.0.1 Ranking

While the differences discussed above provide some information regarding the general "austerity" of each index they do not give any information on how the countries are coded in each year with respect to each other. When ranking all countries according to their democracy index value in a given year is each country ranked consistently across the three measures? In the following the country rankings will be compared across the three democracy measures. Note, that this exercise has its limitations due to the uncertainty embedded in each measure. For an excellent discussion of this see Høyland et al. (2012). For each year, all countries were ranked according to their democracy index values obtaining a rank in Polity2 values, a rank in FHI values and a rank in Polyarchy values. The regional average

Figure 14: Regional average ranks based on the yearly values coded by each of the democracy indices

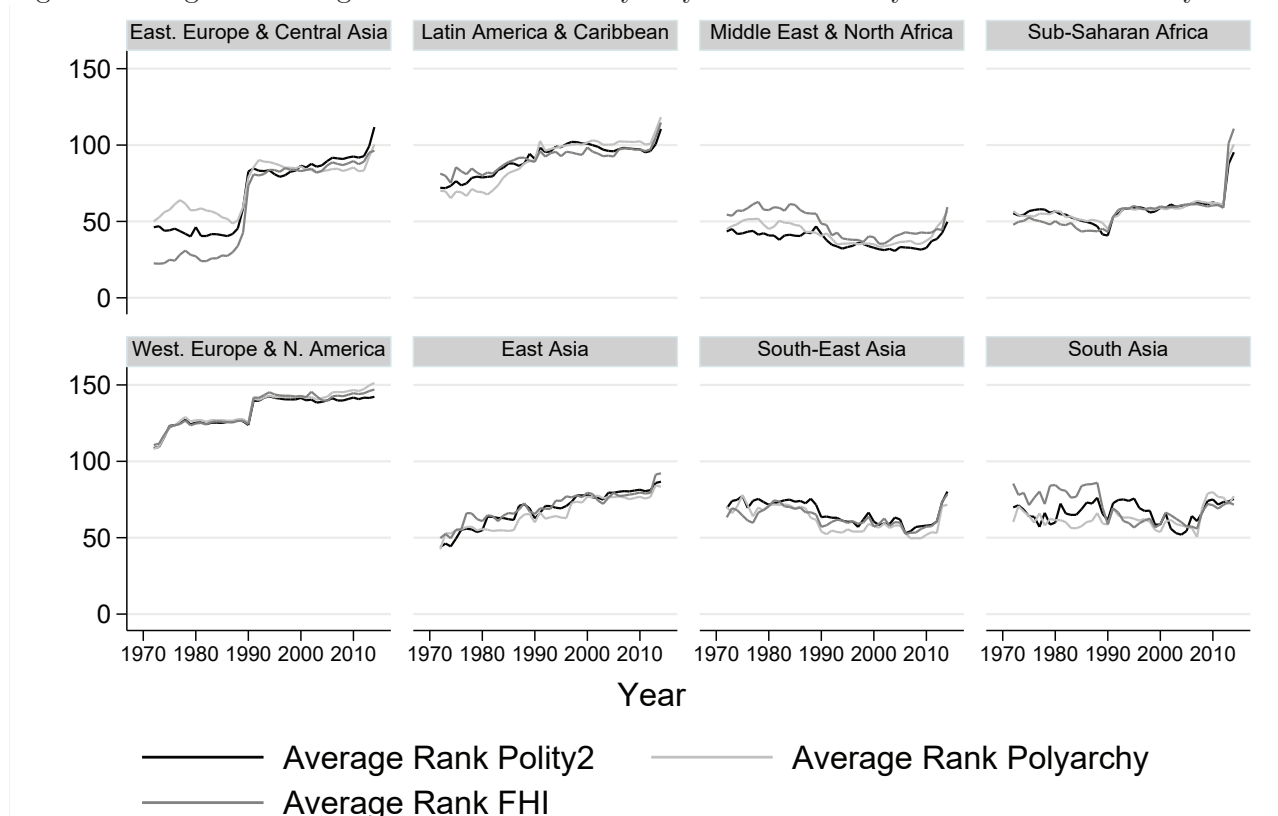


Table 17: Kendall's  $\tau_b$  (upper right side) and Spearman's  $\rho$  (bottom left side)

	Rank Polity2	Rank Polyarchy	Rank FHI
Rank Polity2	-	0.6903***	0.6909***
Rank Polyarchy	0.8735***	-	0.7303***
Rank FHI	0.8729***	0.8993***	-

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$

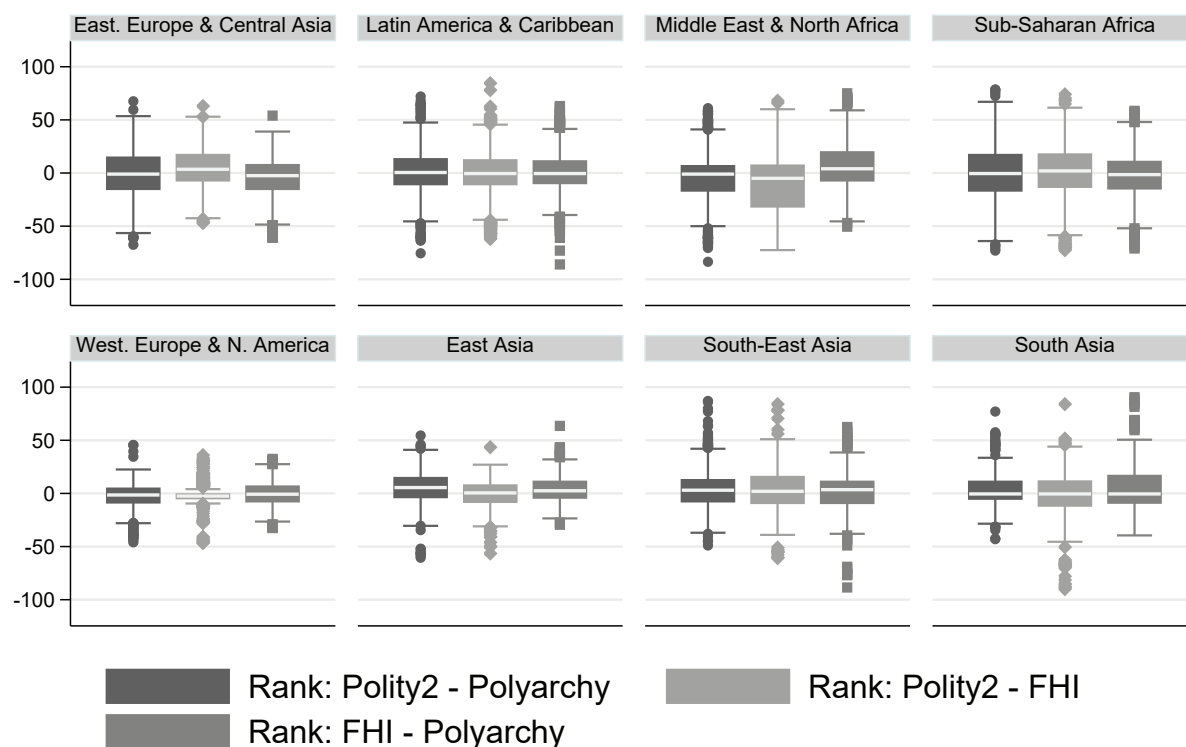
democracy values from Figure 5 are thus reproduced as regional average ranks in Figure 14. A rank of 1 corresponds to the lowest possible democracy index value. The ranks are coded keeping the overall sum constant. Note that the ranking should only be compared within single years but not over time as one country's ranking can change when other countries are coded as democratic.

Western European & North American, Sub-Saharan African and East Asian countries are ranked very similarly by the indices. The difference in values for Eastern Europe & Central Asia translates into the most pronounced difference in rankings. Hence, in research frameworks in which countries of that time period and region are considered it is very likely that the results will vary with the index used. Therefore, using the FHI in such cases is inadvisable. Further notable differences in rankings occur before 1990 in the MENA region and South Asia. In these cases, FHI assigns higher average democracy values than the other two indices.

Figure 15 displays a boxplot of the differences between index rankings by region. The difference in ranks has the highest variability for Polity2-Polyarchy in Sub-Saharan Africa. Figure 15 shows that the medians for the difference in ranges are in most cases close to and the interquartile ranges centered around 0. This suggests that the differences in index values do not translate into difference in ranks.



Figure 15: Boxplot of differences in yearly country rankings between indices by region



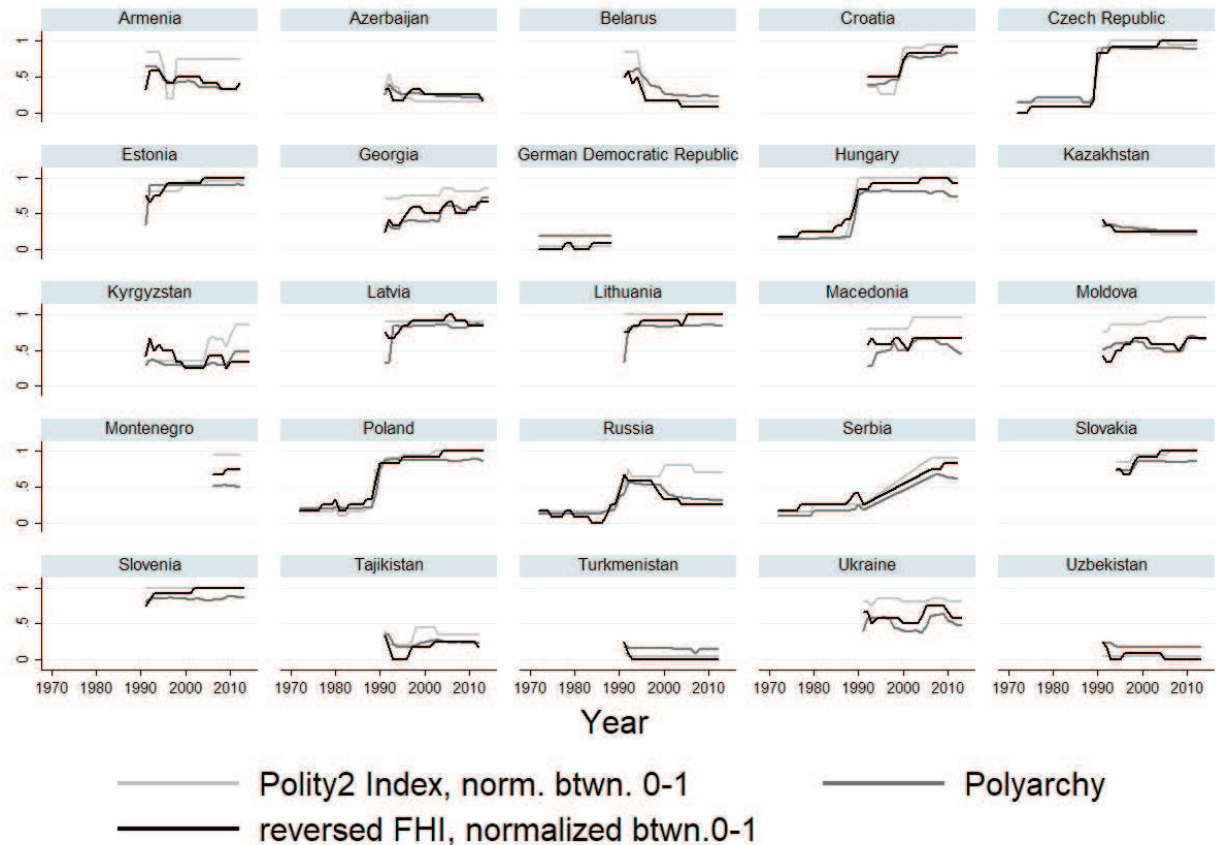
Lastly, the similarities of the rankings are compared using Kendall's  $\tau$ <sup>114</sup> and Spearman's  $\rho$ . A  $\tau$  or a  $\rho$  close to 1 implies a strong association between the rankings. Spearman's  $\rho$  "accepts" small differences in ranking from time to time and is very sensitive to large errors (even if they occur only once). Kendall's  $\tau$  on the other hand is relatively insensitive to large errors occurring just once. The rank correlation coefficients are displayed in Table 17. Both, Kendall's  $\tau$  and Spearman's  $\rho$ , point to a very strong agreement with respect to the ranking for all variables. The nullhypothesis of independent rankings is rejected in all pairwise comparisons. In sum, the vast majority of country years is ranked consistently across all indices.

<sup>114</sup>To include ties we used  $\tau_b$ .

# I Eastern Europe and Central Asia (EECA)

Figure 16 displays the country codings by Polity2, FHI and Polyarchy for each country in the EECA region with more than 7 years of data available in the trunk dataset (Kosovo and Bosnia and Herzegovina did not meet this criterion and were thus left out, see Table 20).

Figure 16: Democracy coding by Polity2, FHI and Polyarchy for selected countries in Eastern Europe & Central Asia



## J Countries and their respective geopolitical regions

Table 18: Countries and their respective geopolitical regions as coded in section *Comparison*.

Region	Countries
1 East. Europe & Central Asia (31 countries)	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, German Democratic Republic, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan
2 Latin America & Caribbean (24 countries)	Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Venezuela
3 Middle East & North Africa (18 countries)	Algeria, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, South Yemen, Syria, Tunisia, Turkey, Yemen
4 Sub-Saharan Africa (47 countries)	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Republic of the Congo, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe
5 West. Europe & North America (21 countries)	Australia, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States
6 East Asia (5 countries)	China, Japan, North Korea, South Korea, Taiwan
7 South-East Asia (14 countries)	Burma/Myanmar, Cambodia, Democratic Republic of Vietnam, Fiji, Indonesia, Laos, Malaysia, Papua New Guinea, Philippines, Republic of Vietnam, Singapore, Solomon Islands, Thailand, Timor-Leste
8 South Asia (7 countries)	Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka

## K Slow changing level of democracy in Polity2 Index

When using the Polity2 Index in time series and/or cross section models one factor to keep in mind is the slow changing nature of the level of democracy. In most years the level of a country's previous democracy index is the best predictor for its' current value. Gleditsch & Ward (1997) examined these changes in the Polity II Data (one of Polity IV's predecessors) with the help of Markov transition matrices. They show that much of the variation in the polity index is cross sectional rather than temporal. Table 19 examines the variation in the Polity2 Index more closely.

Table 19: Examining variation in the Polity2 Index

polity2	Overall		Between		Within
	Freq.	Percent	Freq.	Percent	Percent
-10	1354	7.97	33	17.01	42.54
-9	1144	6.73	62	31.96	23.75
-8	512	3.01	50	25.77	13.32
-7	1,884	11.09	107	55.15	25.44
-6	1297	7.63	82	42.27	13.80
-5	586	3.45	64	32.99	8.92
-4	715	4.21	65	33.51	12.41
-3	1,166	6.86	67	34.54	15.27
-2	324	1.91	48	24.74	9.03
-1	540	3.18	48	24.74	10.93
0	415	2.44	69	35.57	9.66
1	379	2.23	37	19.07	10.77
2	464	2.73	52	26.80	9.72
3	282	1.66	37	19.07	6.84
4	535	3.15	49	25.26	13.73
5	441	2.60	58	29.90	11.08
6	547	3.22	58	29.90	14.62
7	549	3.23	61	31.44	12.59
8	773	4.55	65	33.51	15.25
9	645	3.80	48	24.74	18.53
10	2,440	14.36	43	22.16	46.71
Total	16,992	100.00	1,203	620.10	16.13

(n=194)

For the overall part the unit of observation is a country-year. There are 1,354 observations in which a country in a given year obtained a polity index value of -10. In the between part the unit of observation is a country instead of a country-year; 33 of the countries ever had a Polity2 value of -10 and a total of 1203 countries was categorized. Due to the fact that the data only includes 194 countries, it follows that some countries switched between the categories. The within percent indicates the percentage of the time a country has the specified Polity2 value. Conditional on a country ever having a Polity2 value of -10, 42.54% of that same country's observations have the same index value. Interestingly, this percentage increases for both "high" democracies and autocracies. Conditional on a country ever having obtained a Polity2 value of 10, 46.71% of that country's observations have the same index value. This fraction is much smaller (around 10%) for Polity2 values between -2 and 2.

## L Countries and years included in the trunk dataset

Table 20: Countries (A-F) and years included in the trunk dataset

country	first year	last year	# years in sample	# of missing years
Afghanistan	1972	2015	21	23
Albania	1972	2015	44	0
Algeria	1972	2015	44	0
Angola	1975	2015	41	0
Argentina	1972	2015	44	0
Armenia	1991	2015	25	0
Australia	1972	2015	44	0
Austria	1972	2015	44	0
Azerbaijan	1991	2015	25	0
Bangladesh	1972	2015	44	0
Belarus	1991	2015	25	0
Belgium	1972	2015	44	0
Benin	1972	2015	44	0
Bhutan	1972	2015	44	0
Bolivia	1972	2015	44	0
Bosnia and Herzegovina	1993	1994	2	0
Botswana	1972	2015	44	0
Brazil	1972	2015	44	0
Bulgaria	1972	2015	44	0
Burkina Faso	1972	2015	44	0
Burma/Myanmar	1972	2014	43	0
Burundi	1972	2015	44	0
Cambodia	1972	2015	35	9
Cameroon	1972	2015	44	0
Canada	1972	2015	44	0
Cape Verde	1975	2015	41	0
Central African Republic	1972	2015	44	0
Chad	1972	2015	44	0
Chile	1972	2015	44	0
China	1972	2015	44	0
Colombia	1972	2015	44	0
Comoros	1975	2015	41	0
Costa Rica	1972	2015	44	0
Croatia	1991	2015	25	0
Cuba	1972	2015	44	0
Cyprus	1972	2015	44	0
Czech Republic	1972	2015	44	0
Democratic Republic of Congo	1972	2015	44	0
Democratic Republic of Vietnam	1972	2015	44	0
Denmark	1972	2015	44	0
Djibouti	1977	2015	39	0
Dominican Republic	1972	2015	44	0
Ecuador	1972	2015	44	0
Egypt	1972	2015	44	0
El Salvador	1972	2015	44	0
Equatorial Guinea	1972	2015	44	0
Eritrea	1993	2015	23	0
Estonia	1991	2015	25	0
Ethiopia	1972	2015	44	0
Fiji	1972	2015	44	0
Finland	1972	2015	44	0
France	1972	2015	44	0

Table 21: Countries (G-N) and years in trunk dataset continued

country	first year	last year	# years in sample	# of missing years
Gabon	1972	2015	44	0
Gambia	1972	2015	44	0
Georgia	1991	2015	25	0
German Democratic Republic	1972	1988	17	0
Germany	1972	2015	44	0
Ghana	1972	2015	44	0
Greece	1972	2015	44	0
Guatemala	1972	2015	44	0
Guinea	1972	2015	44	0
Guinea-Bissau	1974	2015	42	0
Guyana	1972	2015	44	0
Haiti	1972	2015	44	0
Honduras	1972	2015	44	0
Hungary	1972	2015	44	0
India	1972	2015	44	0
Indonesia	1972	2015	44	0
Iran	1972	2015	44	0
Iraq	1972	2015	37	7
Ireland	1972	2015	44	0
Israel	1972	2015	44	0
Italy	1972	2015	44	0
Ivory Coast	1972	2015	44	0
Jamaica	1972	2015	44	0
Japan	1972	2015	44	0
Jordan	1972	2015	44	0
Kazakhstan	1991	2015	25	0
Kenya	1972	2015	44	0
Kosovo	2009	2015	7	0
Kuwait	1972	2015	43	1
Kyrgyzstan	1991	2015	25	0
Laos	1972	2015	44	0
Latvia	1991	2015	25	0
Lebanon	1972	2015	29	15
Lesotho	1972	2015	44	0
Liberia	1972	2015	44	0
Libya	1972	2015	44	0
Lithuania	1991	2015	25	0
Macedonia	1992	2015	24	0
Madagascar	1972	2015	44	0
Malawi	1972	2015	44	0
Malaysia	1972	2015	44	0
Mali	1972	2015	44	0
Mauritania	1972	2015	44	0
Mauritius	1972	2015	44	0
Mexico	1972	2015	44	0
Moldova	1991	2015	25	0
Mongolia	1972	2015	44	0
Montenegro	2006	2015	10	0
Morocco	1972	2015	44	0
Mozambique	1978	2015	38	0
Namibia	1990	2015	26	0
Nepal	1972	2015	44	0
Netherlands	1972	2015	44	0
New Zealand	1972	2015	44	0
Nicaragua	1972	2015	44	0
Niger	1972	2015	44	0
Nigeria	1972	2015	44	0
North Korea	1972	2015	44	0
Norway	1972	2015	44	0

Table 22: Countries (O-Z) and years in trunk dataset continued

country	first year	last year	# years in sample	# of missing years
Oman	2000	2015	16	0
Pakistan	1972	2015	44	0
Panama	1972	2015	44	0
Papua New Guinea	1975	2015	41	0
Paraguay	1972	2015	44	0
Peru	1972	2015	44	0
Philippines	1972	2015	44	0
Poland	1972	2015	44	0
Portugal	1972	2015	44	0
Qatar	1972	2015	44	0
Republic of Vietnam	1973	1975	3	0
Republic of the Congo	1972	2015	44	0
Romania	1972	2015	44	0
Russia	1972	2015	44	0
Rwanda	1972	2015	44	0
Saudi Arabia	1972	2015	44	0
Senegal	1972	2015	44	0
Serbia	1972	2015	30	14
Sierra Leone	1972	2015	44	0
Singapore	1972	2015	44	0
Slovakia	1994	2015	22	0
Slovenia	1991	2015	25	0
Solomon Islands	1978	2015	37	1
Somalia	1972	2015	43	1
South Africa	1972	2015	44	0
South Korea	1972	2015	44	0
South Sudan	2012	2015	4	0
South Yemen	1972	1989	18	0
Spain	1972	2015	44	0
Sri Lanka	1972	2015	44	0
Sudan	1972	2011	40	0
Suriname	1975	2015	41	0
Swaziland	1972	2015	44	0
Sweden	1972	2015	44	0
Switzerland	1972	2015	44	0
Syria	1972	2015	44	0
Taiwan	1972	2015	44	0
Tajikistan	1991	2015	25	0
Tanzania	1972	2015	44	0
Thailand	1972	2015	44	0
Timor-Leste	2002	2015	14	0
Togo	1972	2015	44	0
Trinidad and Tobago	1972	2015	44	0
Tunisia	1972	2015	44	0
Turkey	1972	2015	44	0
Turkmenistan	1991	2015	25	0
Uganda	1972	2015	43	1
Ukraine	1991	2015	25	0
United Kingdom	1972	2015	44	0
United States	1972	2015	44	0
Uruguay	1972	2015	44	0
Uzbekistan	1991	2015	25	0
Venezuela	1972	2015	44	0
Yemen	1972	2015	43	1
Zambia	1972	2015	44	0
Zimbabwe	1972	2015	44	0