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Martin Paldam

Paper #4

Net-Appendix to: Measuring democracy

Measuring Democracy Project.

The present paper is paper #4 in my project that consists of four papers:

#1. **Main paper**: Measuring Democracy. Eight indices: Polity, Freedom House and V-Dem

#2. Measuring democracy, 1972-2016. How different are eight democracy indices?

#3. Measuring democracy, 1960-2016. How different are the Polity and the V-Dem indices?

#4. Net-Appendix to: Measuring democracy

The papers are all from 2021. They are available at http://martin.paldam.dk/GT-Main2.php

Cross references to e.g. Figure 2 is to the main paper, while Figure A2 is to the Appendix.

A1 Summary in 9 points of Part IIA on the Democratic transition of my book:

Paldam, M., 2021. *The Grand Pattern of Development and the Transition of Institutions*. Cambridge UP, Cambridge UK and New York.

The Grand Transition and its many parts

(1) A transition is a change from one steady state to another. The Grand Transition is the change from traditional to modern society. It consists of transitions in all socioeconomic variables. The best proxy for development is income that is the log to gdp, i.e., real GDP per capita.

(2) A transition is a *strong underlying* process in the data. The curve is flat at the two ends, and in between it moves smoothly from the one level to the other such as:  or  . In each country it is a rather fuzzy process.

(3) The equivalence hypothesis: The transition is the same in wide cross-country data and long time-series. It should be tested where data permits. When tested it has proven a fine approximation. It is taken as the default when one dimension is missing from the data.

(4) This allows panel data to be unified into one big dataset, (x_j, y_j), organized by j. Transition paths are analyzed using kernel regressions, $x = K^x(y, bw)$, where bw is the bandwidth. Kernels greatly reduce the fuzziness.

One transition is the Democratic Transition

(5) The empirics in the book mainly relies on the Polity index, but the papers listed on page 1 show that it generalizes to seven more democracy indices.

(6) The transition is different in very resource rich countries, notably OPEC countries. This explains why the paper distinguishes between the Main sample and the OPEC sample.

(7) The long run causality is from *Income* to the democracy index.

Two models explain the Democratic Transition

(8) The ***Three Pillars Model*** explains the underlying long-run transition curve. The traditional political system stands on three pillars: (i) A royal family, (ii) a feudal nobility and (iii) a national (monopoly) church. The Grand Transition undermines the two last pillars, and eventually leads to democracy.

(9) The ***Jumps Model*** explains why countries moves towards the transition path. Political systems are constant most years, but sometimes they jump. The key mechanism is that the transition path acts as an attractor for the larger system jumps (above three points) that are generated by random triggering events.

A2 A comparison of the two conversion methods from Table 4 in the B-paper

The two conversion formulas from Paper #3 are:

(1) $PVpol = 20\ Vpol - 7.9$ and

(2) $$PVol2 = (VPol - Av(Vpol)\frac{Std(Polity)}{Std(Vpol)} - Av(Polity) = 25.7\ Vpol - 10.02.$$

Figure A1 show the conversions. As the reader may have guessed the main difference occurs for large values of *Vpol*. This gives the two first difference series:
Dif = *Polity* – *PVpol* and *Dif2* = *Polity* – *PVpol2*.

Figure A1 The two conversion relations

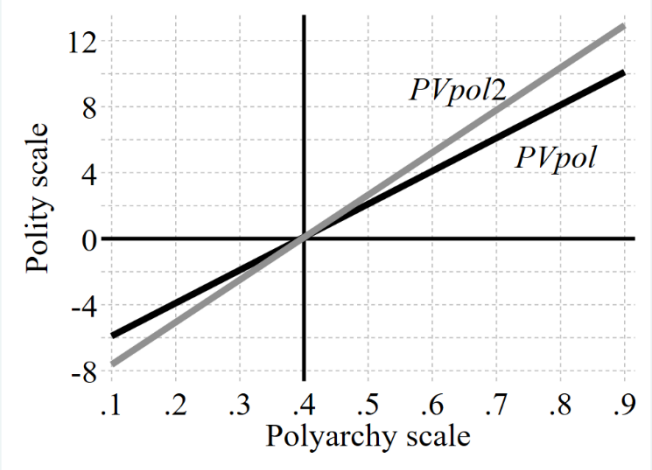
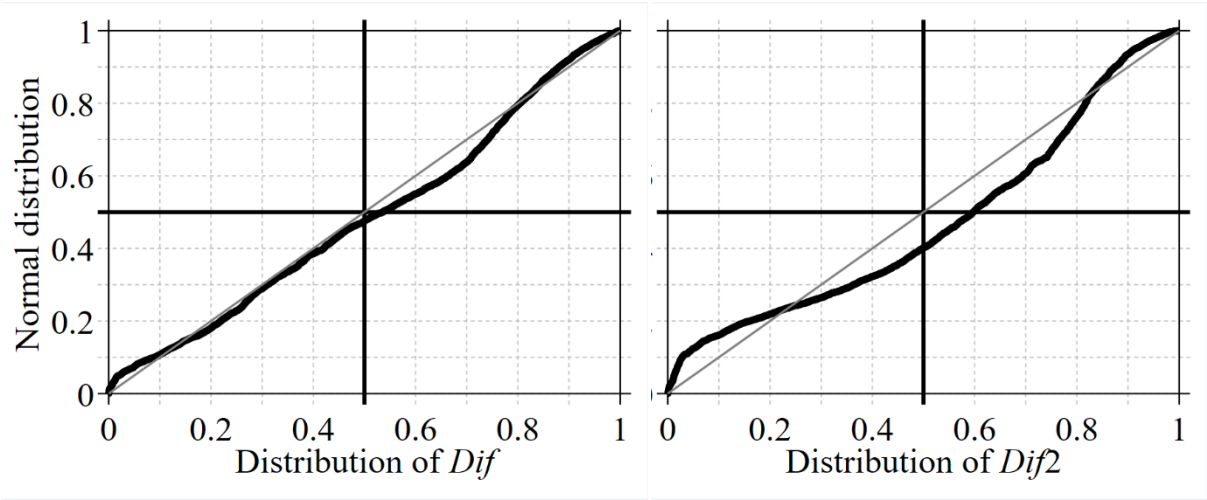


Figure A2. probit diagrams for *Dif* and *Dif*2



Another way to study the two conversions is the look at probit diagrams for *Dif* and *Dif*2 as done at Figure A4. It is clear that *Dif* is closer to normality than *Dif*2. All said, it should be obvious that conversion (1) is prefereable. Tables A1 and A2 report the country averagea for income, *Polity*, *PVpol*, Av(*Dif*) and Nav(*Dif*) in columns (3) to (7).

A3. Statistics for 155 countries: Extreme observations in cols (6), (7) and (10) are bolded

Seven countries has changed. They are provided with (x) where x refers to notes at the end.

Table A1a. Averages for the main variables from country 1 to 40

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Country averages for					Correlations between		
	Country	*N*	Gr	*Income*	*Polity*	*PVpol*	*Avr*(*Dif*)	*Navr*(*Dif*)	*Inc, Polity*	*Inc, PVpol*	*Polity, PVpol*
1	Afghanistan	29	As	7.583	-6.897	-4.959	-1.938	1.938	-0.147	0.227	0.886
2	Albania	56	S/P	8.367	-1.679	-1.639	-0.040	**4.937**	0.874	0.893	0.977
3	Argentina	57	L	9.530	2.667	3.424	-0.757	2.022	0.485	0.446	0.912
4	Armenia	27	S/P	8.536	4.074	0.722	3.352	**4.811**	0.157	-0.525	0.091
5	Australia	57	W	10.208	10	9.571	0.429	0.445	Na	0.750	Na
6	Austria	57	W	10.011	10	9.290	0.710	0.710	Na	0.619	Na
7	Azerbaijan	27	S/P	8.730	-6.037	-3.186	-2.851	3.057	0.051	-0.369	0.592
8	Bahrain	15	M	10.496	-7.933	-3.941	-3.992	3.992	-0.334	-0.015	0.805
9	Bangladesh	45	As	7.308	0.778	-0.195	0.973	3.464	0.350	0.304	0.837
10	Belarus	26	S/P	9.377	-4.731	-1.405	-3.325	4.441	-0.151	-0.436	0.825
11	Belgium	57	W	10.032	9.649	9.025	0.624	1.361	-0.586	0.825	**-0.690**
12	Benin	56	Af	7.383	0.054	-0.013	0.067	1.659	-0.068	-0.037	0.963
13	Bolivia	57	L	7.831	3.123	1.659	1.464	1.931	0.588	0.656	0.916
14	Botswana	51	Af	8.552	6.980	5.754	1.227	1.255	0.941	0.802	0.701
15	Brazil	57	L	8.696	2.579	3.327	-0.748	2.198	0.689	0.812	0.916
16	Bulgaria	57	S/P	9.222	0.386	0.702	-0.316	2.627	0.412	0.375	0.978
17	Burkina Faso	42	Af	7.372	-4.548	-2.080	-2.467	3.654	-0.155	-0.335	0.396
18	Burundi	51	Af	6.919	-2.863	-4.266	1.404	2.892	-0.674	-0.575	0.884
19	Cabo Verde	42	Af	8.001	4.357	4.012	0.345	1.531	0.853	0.872	0.969
20	Cambodia	45	As	7.129	-2.244	-2.275	0.031	3.811	0.791	0.519	0.394
21	Cameroon	56	Af	7.582	-5.911	-3.012	-2.899	2.899	0.320	0.644	0.876
22	Canada	57	W	10.222	10	8.930	1.070	1.070	No	0.505	Na
23	CAR	52	Af	6.980	-3.250	-3.260	0.010	2.346	-0.752	-0.728	0.868
24	Chad	52	Af	7.241	-5.154	-3.782	-1.372	1.924	0.003	0.021	0.555
25	Chile	57	L	9.097	3.947	3.594	0.353	1.231	0.659	0.725	0.941
26	China	57	As	7.910	-7.333	-6.104	-1.229	1.229	0.645	0.617	0.786
27	Colombia	57	L	8.776	7.439	1.966	**5.473**	**5.473**	0.034	0.893	**-0.076**
28	Comoros	40	Af	7.379	1.800	-0.499	2.299	3.825	0.074	-0.077	0.909
29	Congo Ki	43	Af	7.155	-4.535	-3.674	-0.860	**4.641**	-0.893	-0.688	0.842
30	Costa Rica	57	L	8.966	10	8.888	1.112	1.205	Na	0.922	Na
31	Côte d'Ivoire	48	Af	7.908	-6.188	-2.679	-3.509	4.330	0.009	-0.008	0.894
32	Croatia	26	S/P	9.651	4.500	5.138	-0.638	1.735	0.864	0.880	0.948
33	Cuba	56	L	8.607	-6.946	-5.878	-1.068	1.135	-0.146	0.236	**0.000**
34	Cyprus	52	W	9.703	9.538	6.282	3.257	3.257	0.627	0.957	0.715
35	Czech (1)	56	S/P	9.744	0.911	2.335	-1.424	1.795	0.760	0.758	0.984
36	Denmark	57	W	10.145	10	10.146	-0.146	0.217	Na	0.148	Na
37	Djibouti	40	Af	8.003	-3.150	-3.328	0.178	4.322	-0.496	-0.725	0.731
38	Dominican R	53	L	8.601	4.453	1.643	2.810	3.269	0.779	0.883	0.853
39	Egypt	57	M	8.323	-5.702	-3.783	-1.908	2.114	0.855	0.543	0.391
40	El Salvador	48	L	8.267	4.229	-0.473	**4.702**	**4.844**	0.733	0.942	0.736

Table A1b. Averages for the main variables from country 41 to 85

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Country averages for					Correlations between		
Country	*N*	Gr	*Income*	*Polity*	*PVpol*	*Avr*(*Dif*)	*Navr*(*Dif*)	*Inc, Polity*	*Inc, PVpol*	*Polity, PVpol*
41 Estonia	27	S/P	9.586	7.556	9.156	-1.600	2.107	0.581	0.329	0.271
42 Ethiopia	53	Af	6.840	-5.094	-4.650	-0.445	2.055	-0.449	-0.323	0.894
43 Finland	57	W	9.980	10	9.003	0.997	1.015	Na	0.820	Na
44 France	57	W	10.053	8.070	8.971	-0.900	0.941	0.871	0.770	0.867
45 Gambia, The	52	Af	7.662	1.981	-0.439	2.420	**4.641**	0.838	0.743	0.930
46 Georgia	27	S/P	8.629	5.259	1.612	3.647	3.818	0.041	0.587	0.656
47 Germany (2)	57	W	10.114	10	9.721	0.279	0.426	Na	0.680	Na
48 Ghana	56	Af	7.723	-0.804	0.036	-0.840	2.400	0.461	0.554	0.895
49 Greece	57	W	9.582	6.632	6.185	0.447	0.912	0.642	0.743	0.963
50 Guatemala	57	L	8.272	2.298	-1.021	3.319	3.509	0.746	0.888	0.908
51 Gu-Bissau	42	Af	7.184	-1.095	-2.368	1.273	2.874	0.053	0.059	0.960
52 Guinea	57	Af	7.166	-4.930	-3.715	-1.214	2.685	-0.401	-0.152	0.906
53 Haiti	50	L	7.726	-4.500	-3.009	-1.491	4.374	-0.816	-0.821	0.818
54 Honduras	56	L	8.064	3.750	-0.477	4.227	4.227	0.845	0.738	0.933
55 Hungary	57	S/P	9.332	1.333	1.293	0.040	1.935	0.800	0.753	0.975
56 India	57	As	7.465	8.614	5.922	2.692	2.692	0.493	0.101	0.325
57 Ireland	57	W	9.825	10	9.111	0.889	0.898	Na	0.896	Na
58 Israel	57	W	9.847	7.228	6.769	0.459	2.052	-0.884	0.814	**-0.777**
59 Italy	57	W	9.947	10	8.291	1.709	1.709	Na	0.941	Na
60 Jamaica	57	L	8.585	9.579	4.621	**4.958**	**4.958**	-0.597	0.761	**-0.906**
61 Japan	57	As	9.939	10	9.150	0.850	0.850	Na	-0.027	Na
62 Jordan	57	M	8.432	-6.018	-4.249	-1.769	2.526	0.486	0.637	0.926
63 Kazakhstan	26	S/P	9.274	-5	-2.562	-2.438	2.438	-0.647	-0.630	0.890
64 Kenya	51	Af	7.657	-1.255	-1.924	0.669	4.204	0.431	0.556	0.877
65 Korea N	56	As	7.441	-9.286	-6.023	-3.263	3.263	-0.360	-0.519	0.350
66 Korea S	57	As	9.141	2.298	2.588	-0.290	2.682	0.598	0.869	0.842
67 Kyrgyzstan	27	S/P	8.098	0.519	-1.277	1.796	3.099	0.423	0.596	0.765
68 Laos	45	As	7.485	-6.711	-5.914	-0.797	0.910	-0.352	-0.279	0.856
69 Latvia	27	S/P	9.499	7.556	8.053	-0.497	0.930	-0.017	0.319	0.729
70 Lebanon	27	M	9.441	4.333	0.939	3.394	3.394	0.835	0.491	0.606
71 Lesotho	50	Af	7.357	0.820	-1.493	2.313	4.232	0.576	0.777	0.857
72 Liberia	44	Af	6.822	-2.477	-1.654	-0.823	1.998	-0.545	-0.360	0.928
73 Lithuania	27	S/P	9.526	9.481	8.504	0.977	1.891	0.073	0.247	0.102
74 Luxembourg	57	W	10.425	10	9.387	0.613	0.615	Na	0.404	Na
75 Macedonia	26	S/P	9.101	7.731	1.987	**5.744**	**5.744**	0.767	0.331	0.625
76 Madagascar	55	Af	7.013	0.764	-1.431	2.195	3.553	-0.377	-0.474	0.877
77 Malawi	53	Af	6.920	-2.566	-1.384	-1.182	4.368	-0.191	-0.182	0.950
78 Malaysia	57	As	8.976	4.877	-2.295	**7.172**	**7.172**	-0.465	0.228	0.552
79 Mali	55	Af	6.819	-1.127	-1.069	-0.059	2.944	0.513	0.587	0.950
80 Mauritania	57	Af	7.583	-5.614	-2.834	-2.780	2.882	0.627	0.616	0.774
81 Mauritius	49	As	9.177	9.714	7.642	2.072	2.072	0.816	0.921	0.850
82 Mexico	51	L	9.113	0.608	0.930	-0.322	2.342	0.788	0.783	0.991
83 Moldova	27	S/P	8.027	7.444	3.389	4.056	4.510	0.084	0.196	0.355
84 Mongolia	57	S/P	7.791	0.702	0.449	0.253	3.123	0.766	0.738	0.989
85 Montenegro	11	S/P	9.638	9	1.922	**7.078**	**7.078**	Na	-0.919	Na

Table A1c. Averages for the main variables from country 86 to 130

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Country averages for					Correlations between		
	Country	N	Gr	*Income*	*Polity*	*PVpol*	*Avr*(*Dif*)	*Navr*(*Dif*)	*Inc, Polity*	*Inc, PVpol*	*Polity, PVpol*
86	Morocco	57	M	8.359	-6.860	-3.807	-3.053	3.371	0.362	0.848	0.444
87	Mozambique	23	Af	6.686	5	1.543	3.457	3.457	Na	-0.215	Na
88	Myanmar	57	As	7.215	-5.772	-5.089	-0.682	1.595	0.318	0.481	0.877
89	Namibia	27	Af	8.747	6	5.032	0.968	1.101	Na	0.557	Na
90	Nepal	57	As	7.001	-1.825	-3.094	1.269	4.039	0.841	0.894	0.829
91	Netherlands	57	W	10.160	10	9.196	0.804	0.804	Na	0.736	Na
92	New Zealand	57	W	9.919	10	9.425	0.575	0.653	Na	0.798	Na
93	Nicaragua	55	L	8.028	0.727	-0.257	0.985	3.633	-0.047	-0.402	0.873
94	Niger	57	Af	6.930	-1.965	-1.447	-0.518	2.695	-0.737	-0.729	0.882
95	Norway	57	W	10.331	10	9.523	0.477	0.507	Na	0.898	Na
96	Oman	57	M	9.398	-9.281	-6.725	-2.555	2.555	0.789	0.803	0.910
97	Pakistan	55	As	7.744	1.145	-2.355	3.501	**5.304**	0.307	0.834	0.579
98	Panama	57	L	8.857	2.474	1.106	1.368	2.201	0.554	0.719	0.925
99	Paraguay	57	L	8.128	-0.719	-0.765	0.046	3.708	0.822	0.820	0.979
100	Peru	57	L	8.422	3.491	1.944	1.547	2.228	0.506	0.641	0.915
101	Philippines	57	As	8.124	3.123	0.244	2.879	4.346	0.464	0.565	0.951
102	Poland	57	S/P	9.126	0.930	2.422	-1.492	1.989	0.853	0.838	0.985
103	Portugal	57	W	9.439	4.877	5.269	-0.392	1.486	0.795	0.827	0.979
104	Romania	57	S/P	8.781	-0.105	-0.004	-0.101	3.330	0.735	0.753	0.976
105	Russia (3)	55	S/P	9.555	-1.782	-3.230	1.448	2.812	-0.013	-0.194	0.887
106	Rwanda	56	Af	6.838	-5.357	-3.963	-1.395	1.743	0.302	0.343	0.297
107	Senegal	57	Af	7.580	-0.105	2.554	-2.660	3.611	0.075	-0.103	0.893
108	Serbia (4)	57	S/P	8.683	-2.368	-2.181	-0.187	1.904	0.782	0.806	0.955
109	Sierra Leone	52	Af	7.369	-0.654	-1.559	0.905	3.728	-0.431	-0.653	0.846
110	Singapore	55	As	9.613	-1.509	-0.706	-0.803	1.602	-0.419	0.777	0.164
111	Slovakia	24	S/P	9.769	9.042	7.951	1.091	1.188	0.836	0.605	0.756
112	Slovenia	27	S/P	10.003	9.444	8.762	0.682	1.123	0.282	0.366	0.923
113	South Africa	57	Af	9.049	6.158	0.142	**6.016**	**6.016**	0.637	0.719	0.957
114	Spain	57	W	9.672	4.982	4.874	0.108	0.809	0.790	0.803	0.976
115	Sri Lanka	57	As	8.052	5.789	3.580	2.210	2.210	-0.742	-0.680	0.748
116	Sudan (5)	55	Af	7.612	-4.218	-4.380	0.161	2.732	0.034	0.406	0.580
117	Swaziland	44	Af	8.530	-9.455	-5.369	-4.085	4.085	0.838	0.490	0.345
118	Sweden	57	W	10.130	10	9.786	0.214	0.720	Na	0.743	Na
119	Switzerland	57	W	10.390	10	8.415	1.585	1.593	Na	0.779	Na
120	Syria	56	M	8.399	-8.071	-4.947	-3.124	3.290	-0.379	0.314	0.153
121	Taiwan	57	As	9.490	0.351	-0.416	0.767	2.600	0.910	0.872	0.945
122	Tajikistan	27	S/P	7.706	-3.259	-3.276	0.017	1.264	-0.004	0.313	0.163
123	Tanzania	56	Af	7.412	-3.839	-0.576	-3.263	3.333	-0.135	-0.358	0.896
124	Thailand	57	As	8.454	1.737	-1.977	3.714	4.428	0.626	0.662	0.871
125	Togo	57	Af	7.235	-4.842	-2.900	-1.942	1.960	-0.647	-0.625	0.802
126	Trinidad	55	L	9.521	8.964	6.186	2.777	2.777	0.494	0.289	0.800
127	Tunisia	57	M	8.553	-5.140	-2.999	-2.141	2.724	0.804	0.421	0.795
128	Turkey	57	M	9.049	6.526	2.384	4.142	**4.841**	-0.087	0.413	0.367
129	Turkmenistan	26	S/P	8.929	-8.808	-4.965	-3.843	3.843	0.517	-0.213	0.254
130	Uganda	52	Af	7.126	-2.846	-2.785	-0.061	2.597	0.135	0.391	0.549

Table A1d. Averages for the main variables from country 131 to 139

	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
				Country averages for					Correlations between		
	Country		Gr	*Income*	*Polity*	*PVpol*	*Av*(*Dif*)	*Nav*(*Dif*)	*Inc, Polity*	*Inc, PVpol*	*Polity, PVpol*
131	UK	57	W	10.050	10.000	8.924	1.076	1.076	Na	0.620	Na
132	Ukraine	27	S/P	8.894	5.741	1.768	3.973	4.236	-0.373	0.118	0.458
133	Uruguay	57	L	9.200	5.526	5.431	0.095	1.089	0.397	0.450	0.976
134	USA	57	W	10.435	9.719	8.456	1.264	1.372	0.296	0.876	0.424
135	Uzbekistan	27	S/P	8.465	-8.815	-4.314	**-4.501**	**4.501**	-0.035	-0.163	0.390
136	Vietnam (6)	57	As	7.442	-7.158	-4.215	-2.943	2.943	0.319	-0.112	**-0.634**
137	Yemen (7)	50	M	7.824	-3.360	-4.040	0.680	1.209	0.327	0.770	0.712
138	Zambia	49	Af	7.465	-0.633	-0.649	0.016	4.289	0.211	0.080	0.905
139	Zimbabwe	47	Af	7.908	-0.723	-2.862	2.138	**4.802**	0.209	-0.397	**-0.677**
	Averages	6852		8.558	1.585	1.179	0.428	2.724	0.246	0.357	0.682

Gr in Column (2) refers to six country groups: ***Af*** is Sub-Saharan Africa. ***As*** is Asian, ***L*** is Latin America, ***M*** is MENA for Middle Eastern and North Africa. ***S/P*** is the socialist countries that changed to a mixed system, and **W** is Western. ***Na*** is used for the 2 *x* 20 cases where Polity is constant and no correlation is available. The nine gray-shaded countries are showed in section 5.

Country continuations: (1) Czechoslovakia becomes Czech R. (2) West Germany becomes Germany. (3) USSR becomes Russia. (4) Yugoslavia becomes Serbia (5). Sudan continues after South Sudan leaves. (6) North Vietnam becomes Vietnam. (7) North Yemen becomes Yemen.

Table A2. Averages for the main variables from 16 OPEC countries

	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					Country averages for				Correlations between		
	Country		Gr	*Income*	*Polity*	*PVpol*	Av(*Dif*)	Nav*(Dif*)	*Inc*, *Polity*	*Inc*, *PVpol*	*Polity*, *PVpol*
1	Algeria	47	M	9.166	-4.234	-2.853	-1.381	3.250	0.326	0.326	0.815
2	Angola	41	Af	8.026	-4.049	-4.838	0.789	1.310	0.322	0.754	0.791
3	Congo Br	57	Af	7.824	-4.579	-3.903	-0.676	2.225	-0.196	0.078	0.839
4	Ecuador	55	L	8.584	4.491	2.908	1.583	2.007	0.334	0.491	0.895
5	Eqt Guinea	49	Af	8.865	-6.265	-4.947	-1.318	1.643	0.148	0.541	0.260
6	Gabon	57	Af	9.197	-5.404	-2.564	-2.839	3.759	0.445	0.539	0.846
7	Indonesia	57	As	7.991	-2.123	-0.767	-1.355	2.531	0.722	0.702	0.984
8	Iran	56	M	8.920	-6.268	-4.724	-1.544	3.183	0.162	0.521	0.797
9	Iraq	50	M	8.939	-6.060	-5.171	-0.889	2.183	0.364	0.145	0.891
10	Kuwait	42	M	10.880	-7.857	-2.967	**-4.890**	**4.890**	0.103	0.317	0.940
11	Libya	51	M	10.108	-7	-6.212	-0.788	0.788	Na	-0.520	Na
12	Nigeria	56	Af	8.292	-0.232	-1.812	1.580	4.000	-0.136	0.114	0.706
13	Qatar	43	M	11.241	-10	-7.095	-2.905	2.905	Na	0.506	Na
14	Saudi Arabia	57	M	9.978	-10	-7.530	-2.470	2.470	Na	0.257	Na
15	UAE	24	M	11.317	-8	-6.893	-1.107	1.107	Na	-0.788	Na
16	Venezuela	57	L	9.115	6.684	5.014	1.670	2.143	-0.529	-0.612	0.797
	Averages	799		9.278	-4.431	-3.397	-1.034	2.523	0.172	0.211	0.797

See note to Table A1. Na is used in 2 *x* 4 cases. Eight OPEC members are also MENA countries, while 10 MENA countries are not in OPEC: Bahrain, Egypt, Jordan, Lebanon, Morocco, Oman, Syria, Tunisia, Turkey and Yemen.

The statistics for the OPEC countries are calculated in the same way as for the Main sample. Maybe the conversion should be different, but for an easy comparison of Tables A1 and A2, the same formula is used. While the average *Dif* is positive, in the Main sample and negative in the OPEC sample notably in the Arab countries; see Table 7.

Figure A3 gives the distributions of the *Dif* in column (6) and cor(*Polity*, *PVpol*) in column (10) in Tables A1 and A2. The *Dif*-distribution on Figure A3a is almost normal, but it has a small upward tail; see section 5.2. The cor-distribution on Figure A3b is skew. Nearly all of the observations are between 0.8 and 1, as suggested by the correlations for the merger of all observations. Thus, the countries showed in section 5.3 are real outliers.

Figure A3. The relation between the country results for *Polity* and *PVpol*

Figure A3a. The distribution of *Dif*

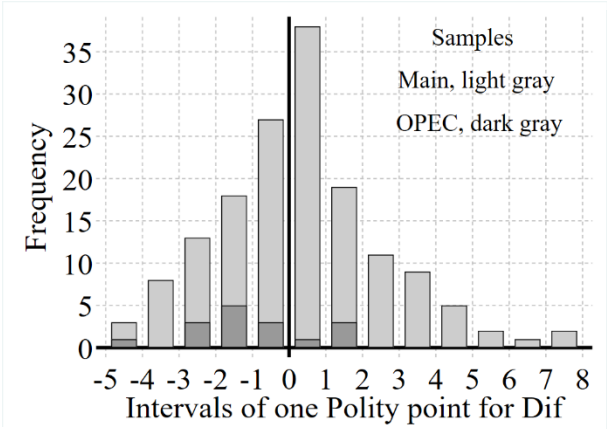
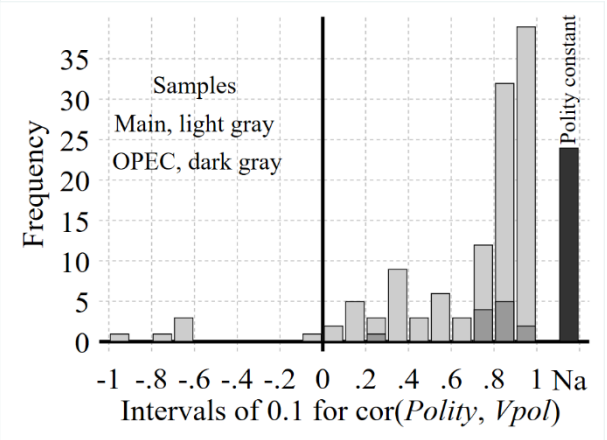


Figure A3b. The distribution of cor



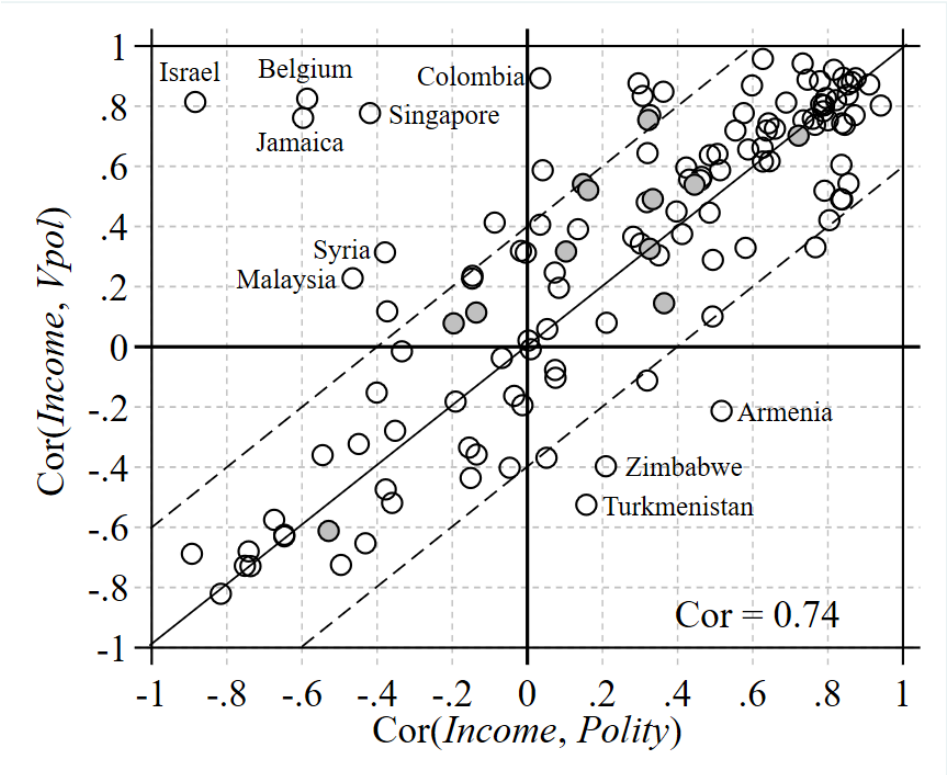
Both graphs cover all 155 countries. On Figure A4b 24 countries have "Na" (for not available) as Polity is constant. This is 20 countries in the Main sample and 4 countries in the OPEC sample, as seen in Tables 1 and 2.

A4 The within country correlations to income

The Democratic Transition is a long run process that is strongest in the between countries data as shown in Table 2, but as shown in the last row of Table A1, the average correlation within countries of *Income* and *Polity* is still 0.23 and of *Income* and *PVpol* is 0.35. Figure A4 compare the two sets of correlations for the countries in the two samples..

The correlation between the two correlations is 0.74, so the two indices tell much the same story. However, there are some exceptions. Some are in countries with short series (Armenia and Turkmenistan), and most of the others are already discussed in Section 6. So the results tally fairly well.

Figure 4A. Comparing correlations to income.
Hollow cirles are for Main sample and gray circles for OPEC sample



A5 The autocorrelations in the democracy indices

Figure A5a and b compares the autocorrelations in the *Polity* and the *Vpol* (*Polyarchy*) series. It can be done for 139 countries, but some series have gaps, in two ways, (ii) if *Polity* is constant no correlation is calculated. The "No gap" line consider the 111 countries where all correlations are calculated. (ii) There may be missing years in the data for a country, such as during a civil war. To make sure that the series are complete the "All 57 obs" line is estimated. It is for 46 countries. Finally, The line where where no correlations are calculated for *Polity* is reported for *Vpol* is the 17 cases where all 57 observations are available.

Figure A5. Autocorrelation functions

Figure A5a. For *Polity*

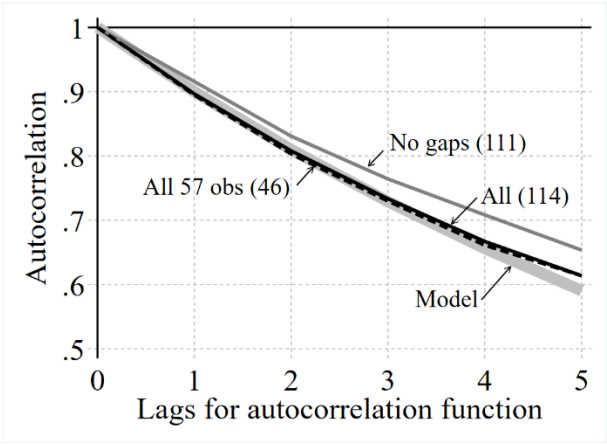
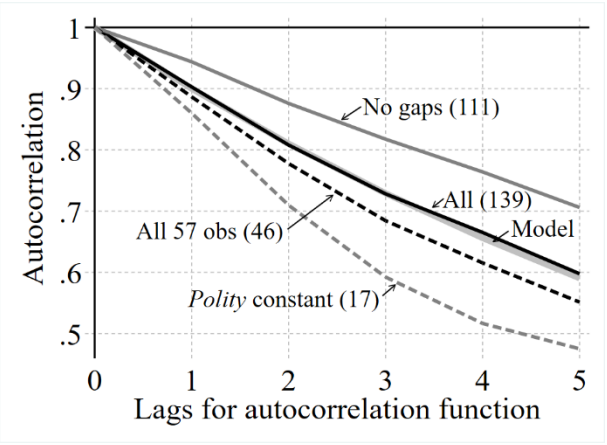


Figure A5b. For *Vpol* (*Polyarchy*)



The main impression from Figure A5 is that the two comparable autocorrelation lines – for "No gaps" and "All 57 obs" are remarkable similar in *Polity* and *Vpol* in spite of the different "structure" of the two indices, where *Polity* is constant most years, while *Vpol* change every year. The first autocorrelation AR(1) ≈ 0.9 in both indices. The fat light gray curve is the model: $AR(i) = 0.9^i$. It is obvious that it gives a good description of the curves.

No autocorrelation is calculated for a constant series, but one may interpret this case as the limiting case where the autocorrelation is 1 for all lags. Hence, the autocorrelation function should be close to one in the *Vpol* series in the case of the 17 countries where *Polity* is constant, but they are not. Here the autocorrelations in these *Vpol*-series are unusually low. The only explanation I have found of this strange fact is that when democracy is high the V-Dem data becomes relatively noisy, as suggested by the Nordic case in section 5.3.

A6 The high end difference illustrated by the Anglo story

Section 6.2 looks at the big difference between *Polity* and *PVpol* in high income countries. Figure A6 is parallel to Figure 7. It shows the big variation of the political system by the *PVpol*-index or the five Anglo countries, while *Polity* is constant at 10.

Figure A6. The path of *Polity* and *PVpol* in Australia, Canada, Ireland, New Zealand and UK

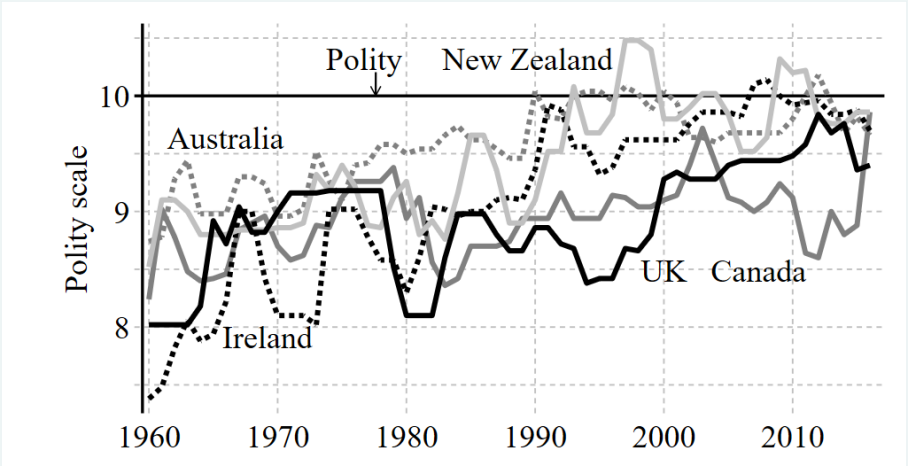


Table A3. Some descriptive statistics for the *PVpol*-data for five Anglo countries

N = 57	Australia	Canada	Ireland	New Zealand	UK
Average	9.57	8.93	9.11	9.43	8.92
Standard dev.	0.35	0.32	0.74	0.52	0.48
Slope	1.7 (9.3)	0.9 (3.9)	4.1 (16.7)	2.5 (9.8)	1.8 (6.0)

Note: *PVpol* are the *Polyarchy* index in the Polity scale. The countries always have 10 points in the *Polity* index. The slope is the coefficient to time measured as 100 *x* Year, with the t-ratio in the parenthesis).

Table A4. Do the five Anglo countries have different levels of democracy?

			(1)	(2)	(3)
(A)	(B)		A – B	Corrected for lagged endogenous	
Difference of A and B		*N*	Mean (t-ratio)	Mean (t-ratio)	Lagged (t-ratio)
Australia	Canada	57	0.64 (12.5)	0.22 (2.6)	0.64 (5.7)
Australia	Ireland	57	0.46 (6.9)	0.07 (1.3)	0.81 (10.7)
Australia	New Zealand	57	0.15 (3.1)	0.05 (1.2)	0.60 (5.5)
Australia	UK	57	0.65 (9.7)	0.08 (1.4)	0.87 (12.4)
Canada	Ireland	57	-0.18 (-2.1)	-0.05 (-0.9)	0.83 (11.5)
Canada	New Zealand	57	-0.50 (-8.2)	-0.13 (-2.0)	0.73 (7.8)
Canada	UK	57	0.01 (0.1)	0.00 (0.1)	0.75 (8.3)
Ireland	New Zealand	57	-0.31 (-4.9)	-0.08 (-1.5)	0.69 (7.4)
Ireland	UK	57	-0.31 (-4.9)	-0.08 (-1.5)	0.69 (7.4)
New Zealand	UK	57	0.50 (7.1)	0.11 (1.8)	0.78 (9.0)

A7 The story of the eight traditional Arab countries

The data covers Bahrain, Jordan, Kuwait, Oman, Morocco, Qatar, Saudi Arabia and UAE, which have a traditional Emirate/Kingdom. In two cases – Qatar and Saudi Arabia – Polity is −10 all years, and in The UAE Polity is −8 all years. In the last three countries there have been some reforms, which is most cases have been reversed after the Arab Spring. Figure A7 shows the series. Note that while Saudi Arabia and Qatar are at the bottom for both indices most of the other Arab kingdoms are treated more lenient by *Vpol*, as shown in section 6.1.

Figure A7a. The eight *Polity* series for traditional Arab Kingdoms/Emirates

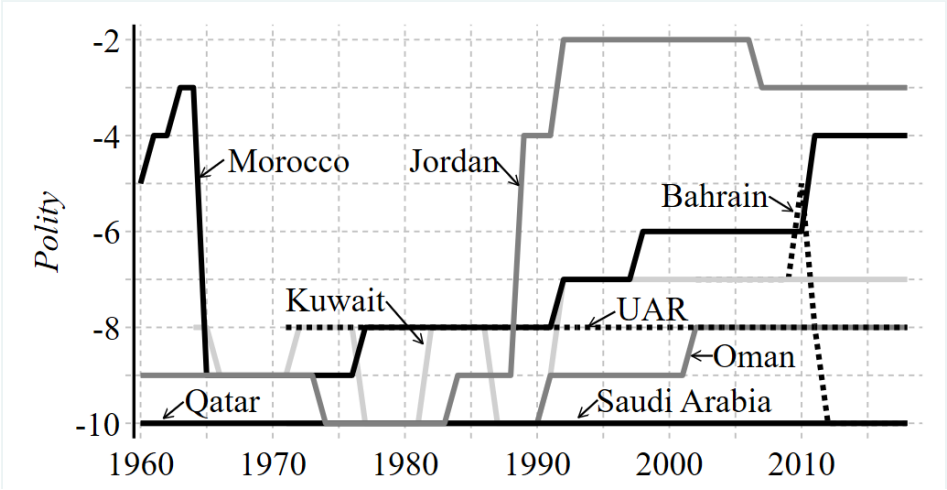


Figure A7b. The eight *Vpol* series for traditional Arab Kingdoms/Emirates