A farewell to critical junctures:
Tables 1, 2 and 3 replicated for the Gastil index

Erich Gundlach, Kiel Institute for the World Economy, Germany[1]

Martin Paldam, School of Economics and Management, University of Aarhus, Denmark[2]

The version of the Gastil index used, G, is the unweighted average of the index for political rights and civil liberties. It is from Freedom House. Endpoint consistent conversions between the Polity index, P, and the Gastil index are:

$$(1) \quad P = (40 - 10G)/3 \quad \text{or} \quad (2) \quad G = 4 - 3P/10$$

Consequently the scale is reversed and more compressed for the Gastil index.

Table 1. The estimated effect of income on the degree of democracy

	Dependent variable: G the Gastil index				
	(1) OK	(2) OK	(3) OK	(4)	(5)
No. of obs. (countries)	100	100	105	100	143
y (IV)	-0.91 (0.18)	-0.98 (0.16)	-1.22 (0.16)	-1.01 (0.18)	-1.03 (0.17)
Instruments	animals, plants	axis, size, climate	bioavg, geoav	biofpc, geofpc	coast, frost, maleco
First stage partial R^2	0.43	0.53	0.52	0.43	0.46
CD F-statistic	36.38	36.25	55.19	36.85	39.17
CD critical value (size)	19.93 (10%)	22.30 (10%)	19.93 (10%)	19.93 (10%)	22.30 (10%)
Sargan test (p-value)	2.91 (0.09)	0.60 (0.74)	5.60 (0.02)	3.45 (0.06)	3.37 (0.19)
y (OLS)	-0.97 (0.12)	-0.97 (0.12)	-1.01 (0.11)	-0.97 (0.12)	-1.09 (0.12)
Adjusted R²	0.40	0.40	0.44	0.40	0.38

Notes: All observations for 1995 or the next available year; standard errors in parentheses. All specifications include a constant term (not reported). A Cragg-Donald (CD) F-statistic below the critical value (10 percent maximal size) indicates that the instruments are weak. The Sargan test for overidentification tests the joint null hypothesis that the instruments are valid and correctly excluded from the estimate.

---

1. Address: Kiel Institute for the World Economy, P.O. Box 4309, D-24100 Kiel, Germany.
E-mail: erich.gundlach@ifw-kiel.de.
2. Address: School of Economics and Management, University of Aarhus, Building 1322, DK-8000 Aarhus C, Denmark. E-mail: mpaldam@econ.au.dk.

Table 2. The effect of additional socio-political variables

	(1)	(2)	(3)	(4)
	Dependent variable: G the Gastil index			
No. of obs. (countries)	92	72	61	39
y (IV)	-0.96 (0.17)	-1.00 (0.25)	-1.44 (0.30)	-1.37 (0.37)
Mining	-1.78 (2.03)			
Gini		0.01 (0.02)		
Homicavg			-0.01 (0.01)	
Suicide				-0.02 (0.02)
First stage partial R^2	0.46	0.33	0.34	0.35
CD F-statistic	37.65	16.83	15.01	9.60
CD critical value (size)	19.93 (10%)	11.59 (15%)	11.59 (15%)	8.75 (20%)
Sargan test (p-value)	2.53 (0.11)	2.44 (0.12)	1.23 (0.27)	0.64 (0.42)
y (OLS)	-0.95 (0.12)	-1.02 (0.15)	-1.18 (0.18)	-1.04 (0.22)
Adjusted R^2	0.40	0.43	0.42	0.52
Control (as above)	-1.77 (2.05)	0.01 (0.02)	-0.00 (0.01)	-.04 (0.02)

Notes: See Table 1. In the IV regressions, biofpc and geofpc are used as instruments, as in column (4) of Table 1. OLS results are conditional on the inclusion of the control variable.

Table 3. The effect of additional ethno-cultural variables

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: G the Gastil index					
No. of obs. (countries)	96	100	101	100	100	101
y (IV)	-1.04 (0.28)	-0.98 (0.18)	-1.00 (0.19)	-0.95 (0.18)	-1.04 (0.17)	-0.98 (0.17)
Ethnoel	-0.28 (0.77)					
Lofre		0.19 (0.28)				
Loeng			0.06 (0.32)			
Prot				-1.68 (0.68)		
Romcat					-0.59 (0.39)	
Muslim						-0.93 (0.12)
First stage partial R^2	0.28	0.42	0.42	0.42	0.50	0.50
CD F-statistic	17.64	35.20	34.38	35.05	48.00	47.99
CD critical value (size)	11.59 (15%)	19.93 (10%)	19.93 (10%)	19.93 (10%)	19.93 (10%)	19.93 (10%)
Sargan test (p-value)	2.90 (0.09)	3.32 (0.07)	3.42 (0.06)	2.55 (0.11)	3.10 (0.08)	1.54 (0.21)
y (OLS)	-0.98 (0.15)	-0.96 (0.12)	-0.97 (0.12)	-0.91 (0.12)	-0.93 (0.12)	-0.83 (0.12)
Adjusted R^2	0.38	0.39	0.38	0.43	0.41	0.45
Control (as above)	-0.16 (0.57)	0.19 (0.28)	0.08 (0.32)	-1.72 (0.67)	-0.66 (0.38)	1.45 (0.44)

Notes: See Table 1. In the IV regressions, biofpc and geofpc are used as instruments, as in column (4) of Table 1. OLS results are conditional on the inclusion of the control variable.

Comment:

Most of the regressions are very similar to the ones for the Polity index reported as Table 1, 2 and 3 in Gundlach and Paldam (2008). Table 4 compares the two sets of results. The Gastil results are slightly larger than the Polity results, after the rescaling. This probably reflects a smaller measurement error in the Gastil data, but the pattern is very similar.

Table 4. A comparison of the main results

	The y (IV)-result	(1)	(2)	(3)	(4)	(5)	(6)	Average
Table 1	Gastil	-0.91	-0.98	-1.22	-1.01	-1.03		-1.03
	Gastil rescaled	3.23	3.11	2.98	3.18	3.07		3.11
	Polity	2.57	2.96	3.41	2.75	3.11		2.96
Table 2	Gastil	-0.96	-1.00	-1.44	-1.37			-1.00
	Gastil rescaled	3.24	3.16	2.90	3.15			3.11
	Polity	2.53	2.81	3.68	2.84			2.97
Table 3	Gastil	-1.04	-0.98	-1.00	-0.95	-1.04	-0.98	-1.00
	Gastil rescaled	3.35	3.19	3.18	3.22	3.12	3.20	3.21
	Polity	2.16	2.69	2.72	2.61	2.92	2.67	2.63

The Gastil TSIV regressions tend to have the same Cragg-Donald test statistics as the Polity regressions because the first stage samples are almost identical. We further note that the Sargan test statistics are generally closer to the standard significance level of 5 percent – and in one case this test actually rejects the instrumentation.

The main result of the exercise is that the Gastil index confirms the results for the Polity index.

References:

Gundlach, E., Paldam, M., 2008. A farewell to critical junctures: Sorting out long-run causality of income and democracy. Conference paper