Appendix 6A

Comparison of Australia and 25 Other Countries in Terms of Political Size and Centralisation

Appendix 6A has two sections which compare 26 countries including Australia in terms of embryonic measures of political size and government structure centralisation or decentralisation. The first extends on Chapter 6's definition of geopolitical size to define a measure of overall political size and compare the 26 selected countries in terms of geopolitical size and overall political size. The second then provides various measures of government structure centralisation and decentralisation which confirm the widely shared view that Australia's system of government is extremely centralised compared to that of most other countries, largely because Australia's local governments are financially very weak.

Political Size Measures and Comparisons of 26 Selected Countries

Table 6A-1 below repeats the Australian geopolitical size figures shown in Table 6-8 in Chapter 6 and also provides corresponding measures for 25 other countries (the same 26 selected countries shown in Table 1-1 of Chapter 1). Table 6A-2 then repeats Table 6A-1 but with $SGP_{U,Y,\alpha}$ values normalised relative to Australian values set to 100.00. Table 6A-3 then provides rank orderings for the figures in Tables 6A-1 and 6A-2. These Tables show that the three giants in terms of geopolitical size as defined here are China, India and the United States. The next four largest countries also stand out over and above the others, these being Brazil, the Russian Federation, Nigeria and Japan. Australia ranks as the 14th largest country in terms of these GPS measures for all $\alpha = 4$ through 10.

Table 6A-1: Land Areas and Geopolitical Sizes (A_U and $SGP_{U,Y,\alpha}$) of Australia and 25 Other Countries in Approximately 2002

Country (U)	A_U (km^2)	$SGP_{U,Y,1}$	$SGP_{U,Y,2}$	$SGP_{U,Y,3}$	$SGP_{U,Y,4}$	$SGP_{U,Y,5}$	$SGP_{U,Y,6}$	$SGP_{U,Y,7}$	$SGP_{U,Y,8}$	$SGP_{U,Y,9}$	$SGP_{U,Y,10}$	$SGP_{U,Y,\infty} = P_{U,Y}$
Australia	7,692,030	151,078,999,697,370	54,473,291,257	3,877,127,839	1,034,363,944	468,135,230	275,953,957	189,183,506	142,533,928	114,361,224	95,888,655	19,640,979
Canada	9,970,610	313,216,742,540,000	99,193,703,178	6,761,304,303	1,765,239,641	788,619,634	460,868,325	314,007,940	235,485,112	188,260,404	157,396,624	31,414,000
Switzerland	41,290	301,045,390,000	1,481,526,894	252,000,881	103,931,769	61,088,024	42,864,186	33,280,781	27,527,559	23,749,734	21,104,331	7,291,000
United States	9,372,000	2,704,759,200,000,000	883,512,028,849	60,847,175,051	15,968,142,394	7,155,875,611	4,190,524,397	2,859,383,237	2,146,719,799	1,717,688,302	1,437,075,399	288,600,000
Austria	83,850	682,455,150,000	2,356,799,199	356,236,764	138,499,057	78,572,697	53,846,179	41,108,216	33,574,452	28,683,157	25,288,400	8,139,000
Belgium	30,528	313,492,032,000	1,794,226,763	320,942,776	135,738,405	80,996,793	57,408,722	44,895,142	37,334,939	32,346,550	28,840,181	10,269,000
Brazil	8,512,000	1,485,216,320,000,000	509,065,781,206	35,626,128,998	9,424,666,723	4,243,892,953	2,493,235,873	1,705,150,098	1,282,366,162	1,027,452,163	860,520,576	174,485,000
Germany	357,000	29,119,776,000,000	48,736,453,387	5,786,410,220	1,993,824,222	1,052,091,367	687,012,306	506,708,431	403,276,895	337,662,591	292,945,368	81,568,000
India	3,287,263	3,445,968,770,377,000	1,900,614,820,694	155,867,308,545	44,636,023,609	21,078,697,728	12,782,504,697	8,942,382,368	6,840,395,178	5,553,536,142	4,700,676,140	1,048,279,000
Malaysia	329,758	8,014,768,190,000	13,957,039,115	1,679,167,702	582,430,971	308,556,496	202,020,224	149,282,619	118,978,926	99,730,602	86,599,455	24,305,000
Nigeria	923,768	122,662,533,880,000	127,623,448,321	12,932,127,842	4,116,610,206	2,071,388,690	1,310,416,955	944,870,503	739,340,305	610,927,032	524,451,473	132,785,000
Russian Federation	17,075,400	2,460,069,953,400,000	595,335,819,732	37,099,398,296	9,261,243,269	4,027,640,951	2,311,914,231	1,555,150,454	1,155,108,904	916,586,245	761,752,098	144,071,000
Spain	504,880	20,470,864,480,000	28,809,923,138	3,228,573,951	1,080,799,308	560,512,948	361,809,010	264,660,533	209,337,261	174,435,787	150,753,302	40,546,000
Denmark	43,000	231,082,000,000	1,114,376,358	188,272,612	77,386,424	45,393,258	31,808,443	24,672,987	20,393,005	17,584,397	15,618,686	5,374,000
Finland	338,000	1,757,938,000,000	3,023,745,283	362,292,286	125,405,340	66,354,471	43,408,319	32,057,681	25,538,856	21,399,860	18,577,126	5,201,000
Italy	301,225	17,312,605,650,000	31,544,012,065	3,852,728,699	1,346,462,235	716,555,158	470,565,329	348,473,807	278,184,418	233,473,230	202,936,668	57,474,000
Japan	371,815	47,382,244,525,000	77,705,574,646	9,163,562,763	3,146,809,480	1,657,120,556	1,080,628,808	796,250,485	633,256,398	529,924,422	459,537,983	127,435,000
Netherlands	41,000	660,305,000,000	3,261,013,957	555,335,387	229,169,435	134,746,502	94,571,012	73,439,524	60,751,739	52,419,427	46,584,251	16,105,000
Norway	324,000	1,470,312,000,000	2,583,074,884	311,682,794	108,268,157	57,408,142	37,608,729	27,802,587	22,165,760	18,584,345	16,140,575	4,538,000
Sweden	449,700	4,013,572,500,000	5,985,075,986	683,779,150	231,120,755	120,557,103	78,119,965	57,301,849	45,417,538	37,906,245	32,802,014	8,925,000
United Kingdom	244,100	14,403,852,800,000	29,153,774,130	3,687,795,428	1,311,604,324	705,382,126	466,486,262	347,186,984	278,199,835	234,169,073	204,017,618	59,008,000
Ireland	70,273	273,853,881,000	1,033,057,876	160,815,006	63,449,401	36,315,172	25,033,899	19,192,377	15,724,577	13,466,740	11,896,227	3,897,000
China	9,571,300	12,260,596,017,500,000	3,963,018,670,599	271,976,238,814	71,249,756,783	31,895,898,434	18,665,335,853	12,729,818,607	9,553,489,268	7,641,948,217	6,392,014,432	1,280,975,000
France	543,965	32,356,126,130,000	43,870,344,134	4,855,596,037	1,615,393,392	834,641,076	537,420,286	392,421,544	309,978,757	258,030,607	222,814,094	59,482,000
New Zealand	267,844	1,055,037,516,000	2,038,576,164	253,910,087	89,609,997	47,969,188	31,625,177	23,485,385	18,787,596	15,793,703	13,745,931	3,939,000
Singapore	620	2,581,680,000	103,682,764	35,506,507	20,778,234	15,065,691	12,159,321	10,433,351	9,301,643	8,507,001	7,920,451	4,164,000

Table 6A-2: Land Areas and Geopolitical Sizes Relative to Australia (A_U^{AUS} and $SGP_{U,Y,\alpha}^{AUS}$) of Selected Countries in Approximately 2002

Country (U)	A_U	$SGP_{U,Y,1}$	$SGP_{U,Y,2}$	$SGP_{U,Y,3}$	$SGP_{U,Y,4}$	$SGP_{U,Y,5}$	$SGP_{U,Y,6}$	$SGP_{U,Y,7}$	$SGP_{U,Y,8}$	$SGP_{U,Y,9}$	$SGP_{U,Y,10}$	$SGP_{U,Y,\infty} = P_{U,Y}$
Australia	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Canada	129.62	207.32	182.10	174.39	170.66	168.46	167.01	165.98	165.21	164.62	164.15	159.94
Switzerland	0.537	0.199	2.72	6.50	10.05	13.05	15.53	17.59	19.31	20.77	22.01	37.12
United States	121.84	1,790.29	1,621.92	1,569.39	1,543.76	1,528.59	1,518.56	1,511.43	1,506.11	1,501.98	1,498.69	1,469.38
Austria	1.09	0.452	4.33	9.19	13.39	16.78	19.51	21.73	23.56	25.08	26.37	41.44
Belgium	0.397	0.208	3.29	8.28	13.12	17.30	20.80	23.73	26.19	28.28	30.08	52.28
Brazil	110.66	983.07	934.52	918.88	911.16	906.55	903.50	901.32	899.69	898.43	897.42	888.37
Germany	4.64	19.27	89.47	149.24	192.76	224.74	248.96	267.84	282.93	295.26	305.51	415.29
India	42.74	2,280.91	3,489.08	4,020.17	4,315.31	4,502.69	4,632.12	4,726.83	4,799.13	4,856.14	4,902.22	5,337.20
Malaysia	4.29	5.31	25.62	43.31	56.31	65.91	73.21	78.91	83.47	87.21	90.31	123.75
Nigeria	12.01	81.19	234.29	333.55	397.98	442.48	474.87	499.45	518.71	534.21	546.94	676.06
Russian Federation	221.99	1,628.33	1,092.89	956.88	895.36	860.36	837.79	822.03	810.41	801.48	794.41	733.52
Spain	6.56	13.55	52.89	83.27	104.49	119.73	131.11	139.90	146.87	152.53	157.22	206.44
Denmark	0.559	0.153	2.05	4.86	7.48	9.70	11.53	13.04	14.31	15.38	16.29	27.36
Finland	4.39	1.16	5.55	9.34	12.12	14.17	15.73	16.95	17.92	18.71	19.37	26.48
Italy	3.92	11.46	57.91	99.37	130.17	153.07	170.52	184.20	195.17	204.15	211.64	292.62
Japan	4.83	31.36	142.65	236.35	304.23	353.98	391.60	420.89	444.28	463.38	479.24	648.82
Netherlands	0.533	0.437	5.99	14.32	22.16	28.78	34.27	38.82	42.62	45.84	48.58	82.00
Norway	4.21	0.97	4.74	8.04	10.47	12.26	13.63	14.70	15.55	16.25	16.83	23.10
Sweden	5.85	2.66	10.99	17.64	22.34	25.75	28.31	30.29	31.86	33.15	34.21	45.44
United Kingdom	3.17	9.53	53.52	95.12	126.80	150.68	169.04	183.52	195.18	204.76	212.77	300.43
Ireland	0.914	0.181	1.90	4.15	6.13	7.76	9.07	10.14	11.03	11.78	12.41	19.84
China	124.43	8,115.35	7,275.16	7,014.89	6,888.27	6,813.39	6,763.93	6,728.82	6,702.61	6,682.29	6,666.08	6,521.95
France	7.07	21.42	80.54	125.24	156.17	178.29	194.75	207.43	217.48	225.63	232.37	302.85
New Zealand	3.48	0.698	3.74	6.55	8.66	10.25	11.46	12.41	13.18	13.81	14.34	20.06
Singapore	0.0081	0.0017	0.190	0.916	2.01	3.22	4.41	5.51	6.53	7.44	8.26	21.20

Table 6A-3: Rank Ordering of Selected Countries by Land Area and Geopolitical Size (A_U and $SGP_{U,Y,\alpha}$) in Approximately 2002

Country (U)	A_U	$SGP_{U,Y,1}$	$SGP_{U,Y,2}$	$SGP_{U,Y,3}$	$SGP_{U,Y,4}$	$SGP_{U,Y,5}$	$SGP_{U,Y,6}$	$SGP_{U,Y,7}$	$SGP_{U,Y,8}$	$SGP_{U,Y,9}$	$SGP_{U,Y,10}$	$SGP_{U,Y,\infty} = P_{U,Y}$
Australia	6	7	9	11	14	14	14	14	14	14	14	15
Canada	2	6	7	8	9	10	12	12	12	12	12	13
Switzerland	23	23	23	23	22	21	21	20	20	20	20	20
United States	4	3	3	3	3	3	3	3	3	3	3	3
Austria	20	20	20	19	18	19	19	19	19	19	19	19
Belgium	25	22	22	20	19	18	18	18	18	18	18	17
Brazil	5	5	5	5	4	4	4	4	4	4	4	4
Germany	13	11	10	9	8	8	8	8	8	8	8	8
India	7	2	2	2	2	2	2	2	2	2	2	2
Malaysia	15	15	15	15	15	15	15	15	15	15	15	14
Nigeria	8	8	6	6	6	6	6	6	6	6	6	6
Russian Federation	1	4	4	4	5	5	5	5	5	5	5	5
Spain	10	12	14	14	13	13	13	13	13	13	13	12
Denmark	22	25	24	24	24	24	23	23	23	23	23	21
Finland	14	17	18	18	20	20	20	21	21	21	21	22
Italy	17	13	12	12	11	11	10	10	11	11	11	11
Japan	12	9	8	7	7	7	7	7	7	7	7	7
Netherlands	24	21	17	17	17	16	16	16	16	16	16	16
Norway	16	18	19	21	21	22	22	22	22	22	22	23
Sweden	11	16	16	16	16	17	17	17	17	17	17	18
United Kingdom	19	14	13	13	12	12	11	11	10	10	10	10
Ireland	21	24	25	25	25	25	25	25	25	25	25	26
China	3	1	1	1	1	1	1	1	1	1	1	1
France	9	10	11	10	10	9	9	9	9	9	9	9
New Zealand	18	19	21	22	23	23	24	24	24	24	24	25
Singapore	26	26	26	26	26	26	26	26	26	26	26	24

Logarithmic Geopolitical Size

The base 10 logarithmic scale is useful in comparing measures in terms of decimal orders of magnitude. Logarithmic measures are especially helpful when measures vary to the vast extents on display in Table 6A-1 above. Accordingly, a *logarithmic geopolitical size* ($LSGP_{U,Y,\alpha}$) is defined here as follows:

$$LSGP_{U,Y,\alpha} = \log_{10}(SGP_{U,Y,\alpha}) \qquad ...[6A.1]$$

The *logarithmic land area* (LA_U) can similarly be defined here as:

$$LA_U = \log_{10}(A_U) \qquad ...[6A.2]$$

Table 6A-4 below provides LA_U and $LSGP_{U,Y,\alpha}$ values for the nine Australian PPUs, and Table 6A-5 provides corresponding figures for the 26 selected countries considered as in Tables 6A-1 through 6A-3 above.

Table 6A-4: Logarithmic Land Areas and Geopolitical Sizes (LA_U and $LSGP_{U,Y,\alpha}$) of Australia's PPUs in 2002

U	A_U	$\alpha = 1$	$\alpha = 2$	$\alpha = 3$	$\alpha = 4$	$\alpha = 5$	$\alpha = 6$	$\alpha = 7$	$\alpha = 8$	$\alpha = 9$	$\alpha = 10$	$\alpha = \infty$
AUS	6.89	14.18	10.74	9.59	9.01	8.67	8.44	8.28	8.15	8.06	7.98	7.29
NSW	5.90	12.73	9.77	8.79	8.30	8.00	7.81	7.67	7.56	7.48	7.41	6.82
VIC	5.36	12.04	9.36	8.47	8.03	7.76	7.58	7.45	7.36	7.28	7.22	6.69
QLD	6.24	12.81	9.69	8.65	8.13	7.82	7.61	7.46	7.35	7.26	7.19	6.57
WA	6.40	12.69	9.49	8.42	7.89	7.56	7.35	7.20	7.08	7.00	6.92	6.28
SA	5.99	12.17	9.18	8.18	7.68	7.38	7.18	7.04	6.93	6.85	6.78	6.18
TAS	4.84	10.51	8.09	7.29	6.88	6.64	6.48	6.37	6.28	6.21	6.16	5.67
ACT	3.39	8.89	7.20	6.64	6.35	6.18	6.07	5.99	5.93	5.88	5.85	5.51
NT	6.13	11.43	8.36	7.34	6.83	6.52	6.32	6.17	6.06	5.98	5.91	5.30

Note that the same STU rank orderings in Table 6A-4 apply to the GSP values in Tables 6A-2 and 6A-3 and also the LGSP values in Table 6A-4 above, as follows from result [6A.4] and the monotonic property of the logarithmic function.

Table 6A-5 now provides $LSGP_{U,Y,\alpha}$ values for Australia and the 25 other countries as in Tables 6A-1 to 6A-3. The same country rank orderings in Table 6A-3 again apply to the GSP values in Tables 6A-1 and 6A-2 and also the LGSP values in Table 6A-5 below.

Table 6A-5: Logarithmic Land Areas and Geopolitical Sizes (LA_U and $LSGP_{U,Y,\alpha}$) of Australia and 25 Other Countries in Approximately 2002

Country (U)	A_U	$SGP_{U,Y,1}$	$SGP_{U,Y,2}$	$SGP_{U,Y,3}$	$SGP_{U,Y,4}$	$SGP_{U,Y,5}$	$SGP_{U,Y,6}$	$SGP_{U,Y,7}$	$SGP_{U,Y,8}$	$SGP_{U,Y,9}$	$SGP_{U,Y,10}$	$SGP_{U,Y,\infty} = P_{U,Y}$
Australia	6.8860	14.1792	10.7362	9.5885	9.0147	8.6704	8.4408	8.2769	8.1539	8.0583	7.9818	7.2932
Canada	6.9987	14.4958	10.9965	9.8300	9.2468	8.8969	8.6636	8.4969	8.3720	8.2748	8.1970	7.4971
Switzerland	4.6158	11.4786	9.1707	8.4014	8.0167	7.7860	7.6321	7.5222	7.4398	7.3757	7.3244	6.8628
United States	6.9718	15.4321	11.9462	10.7842	10.2033	9.8547	9.6223	9.4563	9.3318	9.2349	9.1575	8.4603
Austria	4.9235	11.8341	9.3723	8.5517	8.1414	7.8953	7.7312	7.6139	7.5260	7.4576	7.4029	6.9106
Belgium	4.4847	11.4962	9.2539	8.5064	8.1327	7.9085	7.7590	7.6522	7.5721	7.5098	7.4600	7.0115
Brazil	6.9300	15.1718	11.7068	10.5518	9.9743	9.6278	9.3968	9.2318	9.1080	9.0118	8.9348	8.2418
Germany	5.5527	13.4642	10.6879	9.7624	9.2997	9.0221	8.8370	8.7048	8.6056	8.5285	8.4668	7.9115
India	6.5168	15.5373	12.2789	11.1928	10.6497	10.3238	10.1066	9.9515	9.8351	9.7446	9.6722	9.0205
Malaysia	5.5182	12.9039	10.1448	9.2251	8.7652	8.4893	8.3054	8.1740	8.0755	7.9988	7.9375	7.3857
Nigeria	5.9656	14.0887	11.1059	10.1117	9.6145	9.3163	9.1174	8.9754	8.8688	8.7860	8.7197	8.1231
Russian Federation	7.2324	15.3909	11.7748	10.5694	9.9667	9.6051	9.3640	9.1918	9.0626	8.9622	8.8818	8.1586
Spain	5.7032	13.3111	10.4595	9.5090	9.0337	8.7486	8.5585	8.4227	8.3208	8.2416	8.1783	7.6079
Denmark	4.6335	11.3638	9.0470	8.2748	7.8887	7.6570	7.5025	7.3922	7.3095	7.2451	7.1936	6.7303
Finland	5.5289	12.2450	9.4805	8.5591	8.0983	7.8219	7.6376	7.5059	7.4072	7.3304	7.2690	6.7161
Italy	5.4789	13.2384	10.4989	9.5858	9.1292	8.8552	8.6726	8.5422	8.4443	8.3682	8.3074	7.7595
Japan	5.5703	13.6756	10.8905	9.9621	9.4979	9.2194	9.0337	8.9010	8.8016	8.7242	8.6623	8.1053
Netherlands	4.6128	11.8197	9.5134	8.7446	8.3602	8.1295	7.9758	7.8659	7.7836	7.7195	7.6682	7.2070
Norway	5.5105	12.1674	9.4121	8.4937	8.0345	7.7590	7.5753	7.4441	7.3457	7.2691	7.2079	6.6569
Sweden	5.6529	12.6035	9.7771	8.8349	8.3638	8.0812	7.8928	7.7582	7.6572	7.5787	7.5159	6.9506
United Kingdom	5.3876	13.1585	10.4647	9.5668	9.1178	8.8484	8.6688	8.5406	8.4444	8.3695	8.3097	7.7709
Ireland	4.8468	11.4375	9.0141	8.2063	7.8024	7.5601	7.3985	7.2831	7.1966	7.1293	7.0754	6.5907
China	6.9810	16.0885	12.5980	11.4345	10.8528	10.5037	10.2710	10.1048	9.9802	9.8832	9.8056	9.1075
France	5.7356	13.5100	10.6422	9.6862	9.2083	8.9215	8.7303	8.5938	8.4913	8.4117	8.3479	7.7744
New Zealand	5.4279	12.0233	9.3093	8.4047	7.9524	7.6810	7.5000	7.3708	7.2739	7.1985	7.1382	6.5954
Singapore	2.7924	9.4119	8.0157	7.5503	7.3176	7.1780	7.0849	7.0184	6.9686	6.9298	6.8987	6.6195

Logarithmic Geopolitical Size Relative to Australia

A *logarithmic geopolitical size relative to Australia* ($LSGP^{AUS}_{U,Y,\alpha}$) is now defined as follows:

$$LSGP^{AUS}_{U,Y,\alpha} = LSGP_{U,Y,\alpha} - LSGP_{AUS,Y,\alpha} \qquad ...[6A.3]$$

It follows from the definition in [6A.3] that $LSGP^{AUS}_{U,Y,\alpha}$ will be zero for Australia, greater than zero for countries and polities with SGP and LSGP values greater than those of Australia, and less than zero for countries and polities with SGP and LSGP values less than those of Australia.

A *logarithmic land area relative to Australia* (LA^{AUS}_{U}) is again similarly defined as:

$$LA^{AUS}_{U} = LA_{U} - LA_{AUS} \qquad ...[6A.4]$$

Table 6A-6 below provides LA^{AUS}_{U} and $LSGP^{AUS}_{U,Y,\alpha}$ values for the nine Australian PPUs, and Table 6A-7 provides corresponding figures for the 26 selected countries.

Table 6A-6: Logarithmic Land Areas and Geopolitical Sizes Relative to Australia (LA^{AUS}_{U} and $LSGP^{AUS}_{U,Y,\alpha}$) of Australia's PPUs in 2002

U	A_U	$\alpha = 1$	$\alpha = 2$	$\alpha = 3$	$\alpha = 4$	$\alpha = 5$	$\alpha = 6$	$\alpha = 7$	$\alpha = 8$	$\alpha = 9$	$\alpha = 10$	$\alpha = \infty$
AUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NSW	-0.98	-1.45	-0.96	-0.80	-0.72	-0.67	-0.64	-0.61	-0.59	-0.58	-0.57	-0.47
VIC	-1.53	-2.14	-1.37	-1.12	-0.99	-0.91	-0.86	-0.83	-0.80	-0.78	-0.76	-0.61
QLD	-0.65	-1.37	-1.05	-0.94	-0.89	-0.85	-0.83	-0.82	-0.80	-0.80	-0.79	-0.72
WA	-0.48	-1.49	-1.25	-1.17	-1.13	-1.11	-1.09	-1.08	-1.07	-1.06	-1.06	-1.01
SA	-0.89	-2.00	-1.56	-1.41	-1.34	-1.29	-1.26	-1.24	-1.22	-1.21	-1.20	-1.11
TAS	-2.05	-3.67	-2.64	-2.30	-2.13	-2.03	-1.96	-1.91	-1.88	-1.85	-1.82	-1.62
ACT	-3.50	-5.29	-3.54	-2.95	-2.66	-2.49	-2.37	-2.29	-2.22	-2.17	-2.14	-1.79
NT	-0.76	-2.75	-2.37	-2.25	-2.18	-2.15	-2.12	-2.10	-2.09	-2.08	-2.07	-2.00

Table 6A-7: Logarithmic Geopolitical Sizes Relative to Australia ($LSGP^{AUS}_{U,Y,\alpha}$) of Selected Countries in Approximately 2002

Country (U)	A_U	$LSGP_{U,Y,1}$	$LSGP_{U,Y,2}$	$LSGP_{U,Y,3}$	$LSGP_{U,Y,4}$	$LSGP_{U,Y,5}$	$LSGP_{U,Y,6}$	$LSGP_{U,Y,7}$	$LSGP_{U,Y,8}$	$LSGP_{U,Y,9}$	$LSGP_{U,Y,10}$	$LSGP_{U,Y,\infty} = P_{U,Y}$
Australia	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Canada	0.1127	0.3166	0.2603	0.2415	0.2321	0.2265	0.2227	0.2201	0.2180	0.2165	0.2152	0.2040
Switzerland	-2.2702	-2.7006	-1.5655	-1.1871	-0.9979	-0.8844	-0.8087	-0.7547	-0.7142	-0.6826	-0.6574	-0.4304
United States	0.0858	1.2529	1.2100	1.1957	1.1886	1.1843	1.1814	1.1794	1.1779	1.1767	1.1757	1.1671
Austria	-1.9625	-2.3451	-1.3639	-1.0368	-0.8732	-0.7751	-0.7097	-0.6630	-0.6279	-0.6007	-0.5788	-0.3826
Belgium	-2.4013	-2.6830	-1.4823	-1.0821	-0.8820	-0.7619	-0.6819	-0.6247	-0.5818	-0.5485	-0.5218	-0.2816
Brazil	0.0440	0.9926	0.9706	0.9633	0.9596	0.9574	0.9559	0.9549	0.9541	0.9535	0.9530	0.9486
Germany	-1.3334	-0.7150	-0.0483	0.1739	0.2850	0.3517	0.3961	0.4279	0.4517	0.4702	0.4850	0.6184
India	-0.3692	1.3581	1.5427	1.6042	1.6350	1.6535	1.6658	1.6746	1.6812	1.6863	1.6904	1.7273
Malaysia	-1.3678	-1.2753	-0.5914	-0.3634	-0.2494	-0.1810	-0.1354	-0.1029	-0.0784	-0.0595	-0.0443	0.0925
Nigeria	-0.9205	-0.0905	0.3697	0.5232	0.5999	0.6459	0.6766	0.6985	0.7149	0.7277	0.7379	0.8300
Russian Federation	0.3463	1.2117	1.0386	0.9809	0.9520	0.9347	0.9231	0.9149	0.9087	0.9039	0.9000	0.8654
Spain	-1.1829	-0.8681	-0.2766	-0.0795	0.0191	0.0782	0.1176	0.1458	0.1669	0.1834	0.1965	0.3148
Denmark	-2.2526	-2.8154	-1.6892	-1.3137	-1.1260	-1.0134	-0.9383	-0.8847	-0.8444	-0.8132	-0.7881	-0.5629
Finland	-1.3571	-1.9342	-1.2556	-1.0295	-0.9164	-0.8485	-0.8033	-0.7710	-0.7467	-0.7279	-0.7128	-0.5771
Italy	-1.4071	-0.9408	-0.2373	-0.0027	0.1145	0.1849	0.2318	0.2653	0.2904	0.3100	0.3256	0.4663
Japan	-1.3157	-0.5036	0.1543	0.3736	0.4832	0.5490	0.5928	0.6242	0.6477	0.6659	0.6806	0.8121
Netherlands	-2.2733	-2.3595	-1.2228	-0.8440	-0.6545	-0.5409	-0.4651	-0.4110	-0.3704	-0.3388	-0.3135	-0.0862
Norway	-1.3755	-2.0118	-1.3240	-1.0948	-0.9802	-0.9114	-0.8655	-0.8328	-0.8082	-0.7891	-0.7738	-0.6363
Sweden	-1.2331	-1.5757	-0.9591	-0.7536	-0.6508	-0.5892	-0.5481	-0.5187	-0.4967	-0.4796	-0.4659	-0.3426
United Kingdom	-1.4985	-1.0207	-0.2715	-0.0217	0.1031	0.1781	0.2280	0.2637	0.2904	0.3113	0.3279	0.4777
Ireland	-2.0393	-2.7417	-1.7221	-1.3822	-1.2122	-1.1103	-1.0423	-0.9938	-0.9573	-0.9290	-0.9064	-0.7024
China	0.0949	1.9093	1.8618	1.8460	1.8381	1.8334	1.8302	1.8279	1.8262	1.8249	1.8239	1.8144
France	-1.1505	-0.6692	-0.0940	0.0977	0.1936	0.2511	0.2895	0.3169	0.3374	0.3534	0.3662	0.4812
New Zealand	-1.4582	-2.1559	-1.4269	-1.1838	-1.0623	-0.9894	-0.9408	-0.9061	-0.8800	-0.8598	-0.8436	-0.6978
Singapore	-4.0936	-4.7673	-2.7205	-2.0382	-1.6971	-1.4924	-1.3559	-1.2585	-1.1854	-1.1285	-1.0830	-0.6737

Overall Political Size (SOP)

As acknowledged earlier, geopolitical size as defined above, in terms of population and land area alone, is a less than complete measure of a country's overall political size, or footprint, on the global arena. Accordingly, a measure of Overall Political Size (SOP) is defined here by the following formula:

$$SOP_{U,Y,\alpha,\beta} = (P_{U,Y}) \times (A_U)^{\frac{1}{\alpha}} \times (gdp_{U,Y})^{\frac{1}{\beta}} \qquad ...[6A.5]$$

where: SOP = overall political size;

U = the political unit whose SOP is being calculated;

Y = the year in which SOP is calculated (or the date on which SGP is calculated);

α = land area weighting coefficient and first SOP identifier

β = Per capita GDP weighting coefficient and second SOP identifier

$P_{U,Y}$ = estimated population of U at date D;

A_U = land area of U; and

$gdp_{U,Y}$ = per capita GDP as given by the following formula:

$$gdp_{U,Y} = \frac{GDP_{U,Y}}{P_{U,Y}} \qquad ...[6A.6]$$

As with all political size and geopolitical size indices defined previously (Drummond 2002: 54) and above, result [6A.5] is presented here as an exploratory measure which could be further tested and refined. For present purposes, these indices are employed in an effort to compare Australia and its STUs with other countries and political units generally, in terms of their geopolitical and overall political size. For illustrative purposes, SOP values as in [6A.5] are calculated here using the GDP weighting factor of $\beta = 2$, so that [6A.5] becomes the following:

$$SOP_{U,Y,\alpha,2} = (P_{U,Y}) \times (A_U)^{\frac{1}{\alpha}} \times (gdp_{U,Y})^{\frac{1}{2}} \qquad ...[6A.7]$$

Table 6A-8 below provides GDP values (where GDP equates to SDP at the STU level) in US dollars, per capita GDP values, and *overall political size* ($SOP_{U,Y,\alpha,2}$) values for Australia's nine PPUs, for $\alpha = 1$ to 10 and $\alpha = \infty$, again in 2002. Overall political size ($SOP_{U,Y,\alpha,2}$) values are expressed in scientific notation where "E" denotes "multiplied by 10 to the power of".

Table 6A-8: GDP in Gross and Per Capita Terms and Overall Political Sizes ($SOP_{U,Y,\alpha}$) of Australia's PPUs in 2002

U	GDP / SDP ($USb)	$gdp_{U,Y}$ (US$ per person)	$SOP_{U,Y,1,2}$	$SOP_{U,Y,2,2}$	$SOP_{U,Y,3.2}$	$SOP_{U,Y,4,2}$	$SOP_{U,Y,5,2}$	$SOP_{U,Y,6,2}$	$SOP_{U,Y,7,2}$	$SOP_{U,Y,8,2}$	$SOP_{U,Y,9,2}$	$SOP_{U,Y,10,2}$	$SOP_{U,Y,\infty,2}$
AUS	411.900	20,971	2.188E+16	7.889E+12	5.615E+11	1.498E+11	6.779E+10	3.996E+10	2.740E+10	2.064E+10	1.656E+10	1.389E+10	2.844E+09
NSW	144.089	21,719	7.828E+14	8.748E+11	9.079E+10	2.925E+10	1.482E+10	9.421E+09	6.816E+09	5.347E+09	4.427E+09	3.807E+09	9.777E+08
VIC	105.968	21,817	1.632E+14	3.421E+11	4.379E+10	1.567E+10	8.456E+09	5.605E+09	4.179E+09	3.353E+09	2.825E+09	2.463E+09	7.174E+08
QLD	69.331	18,683	8.778E+14	6.673E+11	6.090E+10	1.840E+10	8.971E+09	5.558E+09	3.948E+09	3.055E+09	2.502E+09	2.133E+09	5.072E+08
WA	44.910	23,336	7.438E+14	4.676E+11	4.006E+10	1.173E+10	5.610E+09	3.432E+09	2.416E+09	1.857E+09	1.513E+09	1.284E+09	2.940E+08
SA	27.154	17,880	1.997E+14	2.014E+11	2.019E+10	6.395E+09	3.208E+09	2.025E+09	1.458E+09	1.140E+09	9.408E+08	8.071E+08	2.031E+08
TAS	7.067	14,953	3.953E+12	1.511E+10	2.364E+09	9.346E+08	5.357E+08	3.696E+08	2.835E+08	2.324E+08	1.991E+08	1.759E+08	5.779E+07
ACT	8.237	25,620	1.251E+11	2.537E+09	6.919E+08	3.613E+08	2.447E+08	1.887E+08	1.567E+08	1.364E+08	1.224E+08	1.122E+08	5.146E+07
NT	5.143	25,890	4.313E+13	3.713E+10	3.532E+09	1.089E+09	5.379E+08	3.360E+08	2.401E+08	1.866E+08	1.534E+08	1.311E+08	3.197E+07

Overall Political Size Relative to Australia

Overall political size relative to Australia ($SOP^{AUS}_{U,Y,\alpha,\beta}$) is now defined in result [6A.8] below, such that the measure for Australia as a whole is 100, and the measure for other political units is a fraction of the corresponding value for Australia, expressed as a percentage.

$$SOP^{AUS}_{U,Y,\alpha} = \frac{SOP_{U,Y,\alpha,\beta}}{SOP_{AUS,Y,\alpha,\beta}} \times 100\% \qquad ...[6A.8]$$

GDP relative to Australia ($GDP^{AUS}_{U,Y,\alpha,\beta}$) and *per capita GDP relative to Australia* ($gdp^{AUS}_{U,Y,\alpha,\beta}$) are similarly defined by results [6A.9] and [6A.10] below.

$$GDP^{AUS}_{U,Y,\alpha} = \frac{GDP_{U,Y,\alpha,\beta}}{GDP_{AUS,Y,\alpha,\beta}} \times 100\% \qquad ...[6A.9]$$

and

$$gdp^{AUS}_{U,Y,\alpha} = \frac{gdp_{U,Y,\alpha,\beta}}{gdp_{AUS,Y,\alpha,\beta}} \times 100\% \qquad ...[6A.10]$$

Table 6A-9 now describes Australia's nine PPUs in terms of their GDPs (or SDPs), per capita GDPs and overall political sizes – all as percentages relative to Australia as a whole – using [6A.8] to [6A.10] above, corresponding to the gross figures presented in Table 6A-8 above.

Table 6A-9: GDPs, Per Capita GDPs and Overall Political Sizes Relative to Australia ($GDP^{AUS}_{U,Y,\alpha}$, $gdp^{AUS}_{U,Y,\alpha}$ and $SOP^{AUS}_{U,Y,\alpha}$) of Australia's PPUs in 2002

U	GDP/ SDP	gdp	$\alpha = 1$	$\alpha = 2$	$\alpha = 3$	$\alpha = 4$	$\alpha = 5$	$\alpha = 6$	$\alpha = 7$	$\alpha = 8$	$\alpha = 9$	$\alpha = 10$	$\alpha = \infty$
AUS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
NSW	34.98	103.57	3.58	11.09	16.17	19.52	21.86	23.58	24.88	25.91	26.73	27.41	34.37
VIC	25.73	104.03	0.75	4.34	7.80	10.46	12.47	14.03	15.25	16.24	17.06	17.74	25.22
QLD	16.83	89.09	4.01	8.46	10.85	12.28	13.23	13.91	14.41	14.80	15.11	15.36	17.83
WA	10.90	111.27	3.40	5.93	7.13	7.83	8.28	8.59	8.82	8.99	9.13	9.25	10.34
SA	6.59	85.26	0.91	2.55	3.60	4.27	4.73	5.07	5.32	5.52	5.68	5.81	7.14
TAS	1.72	71.30	0.02	0.19	0.42	0.62	0.79	0.92	1.03	1.13	1.20	1.27	2.03
ACT	2.00	122.17	0.00	0.03	0.12	0.24	0.36	0.47	0.57	0.66	0.74	0.81	1.81
NT	1.25	123.45	0.20	0.47	0.63	0.73	0.79	0.84	0.88	0.90	0.93	0.94	1.12

Table 6A-10 now presents the rank orderings of the GDPs, per capita GDPs and geopolitical sizes of the eight STUs:

Table 6A-10: Rank Ordering of Australia's STUs by GDP, Per Capita GDP and Overall Political Size ($SOP_{U,Y,\alpha,2}$)

U	GDP/ SDP	gdp	$\alpha = 1$	$\alpha = 2$	$\alpha = 3$	$\alpha = 4$	$\alpha = 5$	$\alpha = 6$	$\alpha = 7$	$\alpha = 8$	$\alpha = 9$	$\alpha = 10$	$\alpha = \infty$
NSW	1	5	2	1	1	1	1	1	1	1	1	1	1
VIC	2	4	5	4	3	3	3	2	2	2	2	2	2
QLD	3	6	1	2	2	2	2	3	3	3	3	3	3
WA	4	3	3	3	4	4	4	4	4	4	4	4	4
SA	5	7	4	5	5	5	5	5	5	5	5	5	5
TAS	7	8	7	7	7	7	7	6	6	6	6	6	6
ACT	6	2	8	8	8	8	8	8	8	8	8	8	7
NT	8	1	6	6	6	6	6	7	7	7	7	7	8

The rank orderings of the $SOP_{U,Y,\alpha,2}$ values in Table 6A-10 are identical to the corresponding orderings for the $SGP_{U,Y,\alpha}$ values in Table 6A-4 for the α values of 1,2, 3, 8, 9, 10 and ∞. For $\alpha = 4$ and 5, the orderings are the same except that the orders of TAS and NT are swapped. And for $\alpha = 6$ and 7, the orderings are the same except that the orders of VIC and QLD are swapped.

Overall Political Size of Australia and 25 Other Countries

Table 6A-11 below repeats the Australian figures in Table 6A-8 above and also provides corresponding measures for the 25 other countries considered here. Table 6A-12 then repeats Table 6A-11 but with GDP, per capita GDP and $SOP_{U,Y,\alpha,\beta}$ values normalised relative to Australian values set to 100.00. Table 6A-13 then provides rank orderings for the figures in Tables 6A-11 and 6A-12. The rank orders in Table 6A-13 for $SOP_{U,Y,\alpha}$ are generally similar to those for $SGP_{U,Y,\alpha}$ in Table 6A-3, though rarely identical. Whereas China ranked highest in Table 6A-3, followed by India and then the United States, for all $SGP_{U,Y,\alpha}$ values considered (that is, for $\alpha = 1$ to 10 and $\alpha = \infty$), the United States ranks highest in Table 6A-13, followed by China and then India, again for all $SOP_{U,Y,\alpha}$ values considered.

Table 6A-11: Overall Political Sizes ($SOP_{U,Y,\alpha}$) of Australia and 25 Other Countries in Approximately 2002

Country (U)	GDP ($USb)	$gdp_{U,Y}$ (US$ per person)	$SOP_{U,Y,1,2}$	$SOP_{U,Y,2,2}$	$SOP_{U,Y,3.2}$	$SOP_{U,Y,4,2}$	$SOP_{U,Y,5,2}$	$SOP_{U,Y,6,2}$	$SOP_{U,Y,7,2}$	$SOP_{U,Y,8,2}$	$SOP_{U,Y,9,2}$	$SOP_{U,Y,10,2}$	$SOP_{U,Y,\infty,2}$
Australia	411.900	20,971	2.188E+16	7.889E+12	5.615E+11	1.498E+11	6.779E+10	3.996E+10	2.740E+10	2.064E+10	1.656E+10	1.389E+10	2.844E+09
Canada	724.800	23,073	4.758E+16	1.507E+13	1.027E+12	2.681E+11	1.198E+11	7.000E+10	4.770E+10	3.577E+10	2.860E+10	2.391E+10	4.772E+09
Switzerland	267.400	36,675	5.765E+13	2.837E+11	4.826E+10	1.990E+10	1.170E+10	8.209E+09	6.374E+09	5.272E+09	4.548E+09	4.042E+09	1.396E+09
United States	10383.100	35,977	5.130E+17	1.676E+14	1.154E+13	3.029E+12	1.357E+12	7.948E+11	5.424E+11	4.072E+11	3.258E+11	2.726E+11	5.474E+10
Austria	204.100	25,077	1.081E+14	3.732E+11	5.641E+10	2.193E+10	1.244E+10	8.527E+09	6.510E+09	5.317E+09	4.542E+09	4.005E+09	1.289E+09
Belgium	245.400	23,897	4.846E+13	2.774E+11	4.961E+10	2.098E+10	1.252E+10	8.875E+09	6.940E+09	5.771E+09	5.000E+09	4.458E+09	1.587E+09
Brazil	452.387	2,593	7.563E+16	2.592E+13	1.814E+12	4.799E+11	2.161E+11	1.270E+11	8.682E+10	6.530E+10	5.232E+10	4.382E+10	8.885E+09
Germany	1986.200	24,350	4.544E+15	7.605E+12	9.029E+11	3.111E+11	1.642E+11	1.072E+11	7.907E+10	6.293E+10	5.269E+10	4.571E+10	1.273E+10
India	515.012	491	7.638E+16	4.213E+13	3.455E+12	9.894E+11	4.672E+11	2.833E+11	1.982E+11	1.516E+11	1.231E+11	1.042E+11	2.324E+10
Malaysia	95.157	3,915	5.015E+14	8.733E+11	1.051E+11	3.644E+10	1.931E+10	1.264E+10	9.341E+09	7.445E+09	6.240E+09	5.419E+09	1.521E+09
Nigeria	43.540	328	2.221E+15	2.311E+12	2.342E+11	7.454E+10	3.751E+10	2.373E+10	1.711E+10	1.339E+10	1.106E+10	9.497E+09	2.404E+09
Russian Federation	346.520	2,405	1.206E+17	2.920E+13	1.819E+12	4.542E+11	1.975E+11	1.134E+11	7.627E+10	5.665E+10	4.495E+10	3.736E+10	7.066E+09
Spain	653.100	16,108	2.598E+15	3.656E+12	4.098E+11	1.372E+11	7.114E+10	4.592E+10	3.359E+10	2.657E+10	2.214E+10	1.913E+10	5.146E+09
Denmark	172.900	32,173	4.145E+13	1.999E+11	3.377E+10	1.388E+10	8.142E+09	5.705E+09	4.426E+09	3.658E+09	3.154E+09	2.802E+09	9.639E+08
Finland	131.500	25,284	2.795E+14	4.808E+11	5.761E+10	1.994E+10	1.055E+10	6.902E+09	5.097E+09	4.061E+09	3.403E+09	2.954E+09	8.270E+08
Italy	1184.300	20,606	2.485E+15	4.528E+12	5.530E+11	1.933E+11	1.029E+11	6.755E+10	5.002E+10	3.993E+10	3.351E+10	2.913E+10	8.250E+09
Japan	3993.400	31,337	8.388E+15	1.376E+13	1.622E+12	5.571E+11	2.933E+11	1.913E+11	1.410E+11	1.121E+11	9.381E+10	8.135E+10	2.256E+10
Netherlands	418.500	25,986	1.064E+14	5.257E+11	8.952E+10	3.694E+10	2.172E+10	1.524E+10	1.184E+10	9.793E+09	8.450E+09	7.509E+09	2.596E+09
Norway	190.500	41,979	3.012E+14	5.292E+11	6.386E+10	2.218E+10	1.176E+10	7.706E+09	5.696E+09	4.541E+09	3.808E+09	3.307E+09	9.298E+08
Sweden	240.300	26,924	6.586E+14	9.821E+11	1.122E+11	3.792E+10	1.978E+10	1.282E+10	9.402E+09	7.452E+09	6.220E+09	5.382E+09	1.464E+09
United Kingdom	1564.100	26,507	2.345E+15	4.746E+12	6.004E+11	2.135E+11	1.148E+11	7.595E+10	5.652E+10	4.529E+10	3.812E+10	3.322E+10	9.607E+09
Ireland	121.700	31,229	4.839E+13	1.826E+11	2.842E+10	1.121E+10	6.418E+09	4.424E+09	3.392E+09	2.779E+09	2.380E+09	2.102E+09	6.887E+08
China	1237.145	966	3.810E+17	1.232E+14	8.452E+12	2.214E+12	9.912E+11	5.801E+11	3.956E+11	2.969E+11	2.375E+11	1.986E+11	3.981E+10
France	1431.300	24,063	5.019E+15	6.805E+12	7.532E+11	2.506E+11	1.295E+11	8.337E+10	6.087E+10	4.808E+10	4.003E+10	3.456E+10	9.227E+09
New Zealand	59.300	15,055	1.295E+14	2.501E+11	3.115E+10	1.099E+10	5.886E+09	3.880E+09	2.882E+09	2.305E+09	1.938E+09	1.687E+09	4.833E+08
Singapore	86.969	20,886	3.731E+11	1.498E+10	5.131E+09	3.003E+09	2.177E+09	1.757E+09	1.508E+09	1.344E+09	1.229E+09	1.145E+09	6.018E+08

Table 6A-12: Overall Political Sizes Relative to Australia ($SOP^{AUS}_{U,Y,\alpha}$) of Selected Countries in Approximately 2002

Country (U)	GDP ($USb)	$gdp_{U,Y}$ (US$ per person)	$SOP_{U,Y,1,2}$	$SOP_{U,Y,2,2}$	$SOP_{U,Y,3.2}$	$SOP_{U,Y,4,2}$	$SOP_{U,Y,5,2}$	$SOP_{U,Y,6,2}$	$SOP_{U,Y,7,2}$	$SOP_{U,Y,8,2}$	$SOP_{U,Y,9,2}$	$SOP_{U,Y,10,2}$
Australia	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Canada	175.97	110.02	217.46	191.00	182.92	179.00	176.70	175.18	174.10	173.29	172.67	172.17
Switzerland	64.92	174.88	0.264	3.60	8.60	13.29	17.26	20.54	23.26	25.54	27.46	29.11
United States	2,520.78	171.55	2,344.91	2,124.37	2,055.57	2,022.00	2,002.13	1,988.99	1,979.66	1,972.69	1,967.28	1,962.97
Austria	49.55	119.58	0.494	4.73	10.05	14.64	18.35	21.34	23.76	25.76	27.43	28.84
Belgium	59.58	113.95	0.222	3.52	8.84	14.01	18.47	22.21	25.33	27.96	30.19	32.11
Brazil	109.83	12.36	345.66	328.59	323.09	320.37	318.75	317.68	316.91	316.34	315.90	315.54
Germany	482.20	116.11	20.77	96.41	160.82	207.71	242.17	268.27	288.61	304.88	318.16	329.20
India	125.03	2.34	349.11	534.03	615.32	660.49	689.17	708.98	723.48	734.55	743.27	750.32
Malaysia	23.10	18.67	2.29	11.07	18.71	24.33	28.48	31.63	34.09	36.07	37.68	39.02
Nigeria	10.57	1.56	10.15	29.30	41.71	49.76	55.33	59.38	62.45	64.86	66.80	68.39
Russian Federation	84.13	11.47	551.45	370.12	324.05	303.22	291.37	283.72	278.39	274.45	271.43	269.03
Spain	158.56	76.81	11.87	46.35	72.98	91.57	104.93	114.91	122.60	128.72	133.68	137.78
Denmark	41.98	153.42	0.189	2.53	6.01	9.27	12.01	14.28	16.15	17.72	19.05	20.17
Finland	31.93	120.56	1.28	6.09	10.26	13.31	15.56	17.27	18.61	19.67	20.55	21.27
Italy	287.52	98.26	11.36	57.40	98.50	129.03	151.73	169.03	182.59	193.46	202.37	209.78
Japan	969.51	149.43	38.34	174.37	288.91	371.89	432.71	478.69	514.49	543.09	566.43	585.82
Netherlands	101.60	123.91	0.487	6.66	15.94	24.66	32.04	38.15	43.21	47.45	51.02	54.08
Norway	46.25	200.17	1.38	6.71	11.37	14.81	17.35	19.28	20.79	22.00	22.99	23.82
Sweden	58.34	128.39	3.01	12.45	19.98	25.32	29.18	32.08	34.32	36.10	37.56	38.76
United Kingdom	379.73	126.39	10.72	60.17	106.93	142.56	169.40	190.05	206.32	219.43	230.20	239.20
Ireland	29.55	148.91	0.221	2.31	5.06	7.49	9.47	11.07	12.38	13.46	14.37	15.14
China	300.35	4.61	1,741.54	1,561.23	1,505.38	1,478.21	1,462.14	1,451.53	1,443.99	1,438.37	1,434.01	1,430.53
France	347.49	114.74	22.94	86.27	134.15	167.29	190.98	208.61	222.19	232.95	241.69	248.91
New Zealand	14.40	71.79	0.592	3.17	5.55	7.34	8.68	9.71	10.52	11.17	11.70	12.15
Singapore	21.11	99.59	0.00171	0.190	0.914	2.00	3.21	4.40	5.50	6.51	7.42	8.24

Table 6A-13: Rank Ordering of Selected Countries by Overall Political Size ($SOP_{U,Y,\alpha}$) in Approximately 2002

Country (U)	GDP ($USb)	$gdp_{U,Y}$ (US$ per person)	$SOP_{U,Y,1,2}$	$SOP_{U,Y,2,2}$	$SOP_{U,Y,3.2}$	$SOP_{U,Y,4,2}$	$SOP_{U,Y,5,2}$	$SOP_{U,Y,6,2}$	$SOP_{U,Y,7,2}$	$SOP_{U,Y,8,2}$	$SOP_{U,Y,9,2}$	$SOP_{U,Y,10,2}$
Australia	13	16	7	8	11	12	13	13	13	13	13	13
Canada	8	15	6	6	7	8	9	10	11	11	11	11
Switzerland	15	2	22	21	22	22	21	20	20	20	19	19
United States	1	3	1	1	1	1	1	1	1	1	1	1
Austria	18	11	20	20	20	19	19	19	19	19	20	20
Belgium	16	14	23	22	21	20	18	18	18	18	18	18
Brazil	11	22	5	5	5	5	5	5	5	5	6	6
Germany	3	12	10	9	8	7	7	7	6	6	5	5
India	10	25	4	3	3	3	3	3	3	3	3	3
Malaysia	23	21	16	16	16	17	17	17	17	17	16	16
Nigeria	26	26	14	14	14	14	14	14	14	14	14	14
Russian Federation	14	23	3	4	4	6	6	6	7	7	7	7
Spain	9	19	11	13	13	13	12	12	12	12	12	12
Denmark	20	4	25	24	23	23	23	23	23	23	23	23
Finland	21	10	18	19	19	21	22	22	22	22	22	22
Italy	7	18	12	12	12	11	11	11	10	10	10	10
Japan	2	5	8	7	6	4	4	4	4	4	4	4
Netherlands	12	9	21	18	17	16	15	15	15	15	15	15
Norway	19	1	17	17	18	18	20	21	21	21	21	21
Sweden	17	7	15	15	15	15	16	16	16	16	17	17
United Kingdom	4	8	13	11	10	10	10	9	9	9	9	9
Ireland	22	6	24	25	25	24	24	24	24	24	24	24
China	6	24	2	2	2	2	2	2	2	2	2	2
France	5	13	9	10	9	9	8	8	8	8	8	8
New Zealand	25	20	19	23	24	25	25	25	25	25	25	25
Singapore	24	17	26	26	26	26	26	26	26	26	26	26

Logarithmic Overall Political Size Measures

Logarithmic measures can be defined for overall political size (and GDP and per capita GDP) just as they were for geopolitical size in results [6A.1] and [6A.3] above (and land areas in [6A.2] and [6A.4]). *Logarithmic overall political size* (LSOP) is defined here as follows:

$$LSOP_{U,Y,\alpha,\beta} = \log_{10}(SOP_{U,Y,\alpha,\beta}) \qquad ...[6A.11]$$

Logarithmic overall political size relative to Australia ($LSOP^{AUS}_{U,Y,\alpha,\beta}$) is also defined as:

$$LSOP^{AUS}_{U,Y,\alpha,\beta} = LSOP_{U,Y,\alpha,\beta} - LSOP_{AUS,Y,\alpha,\beta} \qquad ...[6A.12]$$

Tables for logarithmic measures defined by [6A.11] and [6A.12] above are omitted to avoid excessive tabulations.

Government Structure Centralisation and Decentralisation Measures

This section develops *centralisation factors* and *decentralisation factors* which combine with *geopolitical size* indices developed in the previous section to form *centralisation indices* and *decentralisation indices* which are designed to assess government structures in terms of how centralised or decentralised they are. Such factors and indices can provide an objective measure of government system centralisation or decentalisation, and are used here to compare Australia and its STUs with other countries and political units in terms of government structure centralisation or decentralisation.

Federal Unit Decentralisation and Centralisation Factors

A *State-Territory or equivalent federal decentralisation factor* or *federal unit decentralisation factor* ($DF_{STE,U,Y}$ or $DF_{FU,U,Y}$) is defined here by the formula:

$$DF_{STE,U,Y} = (1 + f_{S,U,Y} \times N_{S,U,Y}) \qquad ...[6A.13]$$

where: U is the country or sub-national polity;
Y is the year;
$f_{S,U,Y}$ = State-Territory (or equivalent) own purpose expenditure as a fraction or percentage of total government expenditure, for country or polity U in year Y;
$N_{S,U,Y}$ = the number of State-Territory (or equivalent) type units in country or polity U in year Y; and
$f_{S,U,Y} = N_{S,U,Y} = 0$ and $DF_{STE,U,Y} = 1$ for unitary countries and the Australian States and Territories (and equivalents) considered as unitary polities.

The corresponding *State-Territory or equivalent federal centralisation factor* or *federal unit centralisation factor* (CF_{STE} or $CF_{FU,U,Y}$) is similarly defined here by the formula:

$$CF_{STE,U,Y} = \frac{1}{DF_{STE,U,Y}} = \frac{1}{(1 + f_{S,U,Y} \times N_{S,U,Y})} \qquad ...[6A.14]$$

Note that $DF_{STE,U,Y} = CF_{STE,U,Y} = 1.00$ for unitary countries, for which $f_{S,U,Y} = N_{S,U,Y} = 0$.

Local Government Decentralisation and Centralisation Factors

For government structures with just a single form of local government – that is, a single level and single type of local governments – a *single local government decentralisation factor* ($DF_{SLG,U,Y}$) is defined by:

$$DF_{SLG,U,Y} = (1 + f_{L,U,Y} \times N_{L,U,Y}) \qquad ...[6A.15]$$

where: U is the country or sub-national polity;
Y is the year;
$f_{L,U,Y}$ = local government own purpose expenditure as a fraction or percentage of total government expenditure, for country or polity U in year Y;
$N_{S,U,Y}$ = the number of local governments in country or polity U in year Y; and
$f_{L,U,Y} = N_{L,U,Y} = 0$ and $DF_{SLG,U,Y} = 1$ for countries or polities without any local governments.

The corresponding *single local government centralisation factor* ($CF_{SLG,U,Y}$) is also given by:

$$CF_{SLG,U,Y} = \frac{1}{(1 + f_{L,U,Y} \times N_{L,U,Y})} \qquad ...[6A.16]$$

For government structures hosting more than one form of local government – where "form" here includes different levels and different types of general or special purpose local governments – results in the form of [6A.15] and [6A.16] could be applied to each different form of local government. So for a government structure with k different forms of local government, the *i^{th} local government decentralisation factor* ($DF_{LG\text{-}i,U,Y}$), or the *decentralisation factor for the i^{th} form of local government*, shall be defined by the following expression, where i takes on the counting number values of 1 through to k:

$$DF_{LG_i,U,Y} = (1 + f_{L_i,U,Y} \times N_{L_i,U,Y}) \qquad ...[6A.17]$$

The corresponding *i^{th} local government centralisation factor* ($CF_{LG\text{-}i,U,Y}$), or the *centralisation factor for the i^{th} form of local government*, is similarly given by:

$$CF_{LG_i,U,Y} = \frac{1}{(1 + f_{L_i,U,Y} \times N_{L_i,U,Y})} \quad \text{...[6A.18]}$$

So, for a government structure hosting k different forms of local governments (so that i assumes counting number values from 1 through to k), a generalised *multiple local governments decentralisation factor* ($DF_{MLG\text{-}k}$) can be defined by the expression:

$$\begin{aligned} DF_{MLG\text{-}k,U,Y} &= DF_{LG_1,U,Y} \times DF_{LG_2,U,Y} \times \ldots \times DF_{LG_k,U,Y} \\ &= (1 + f_{L_1,U,Y} \times N_{L_1,U,Y})(1 + f_{L_2,U,Y} \times N_{L_2,U,Y}) \ldots (1 + f_{L_k,U,Y} \times N_{L_k,U,Y}) \end{aligned} \quad \text{...[6A.19]}$$

or, in product notation:

$$DF_{MLG\text{-}k,U,Y} = \prod_{i=1}^{k} DF_{LG_i,U,Y} = \prod_{i=1}^{k} (1 + f_{L_i,U,Y} \times N_{L_i,U,Y}) \quad \text{...[6A.20]}$$

The corresponding *multiple local governments centralisation factor* ($CF_{MLG\text{-}k}$) is similarly defined by:

$$\begin{aligned} CF_{MLG\text{-}k,U,Y} &= CF_{MLG\text{-}k,U,Y} \times CF_{MLG\text{-}k,U,Y} \times \ldots \times CF_{MLG\text{-}k,U,Y} \\ &= \frac{1}{(1 + f_{L1,U,Y} \times N_{L1,U,Y})(1 + f_{L2,U,Y} \times N_{L2,U,Y}) \ldots (1 + f_{Lk,U,Y} \times N_{Lk,U,Y})} \end{aligned} \quad \text{...[6A.21]}$$

or

$$CF_{MLG\text{-}k,U,Y} = \prod_{i=1}^{k} CF_{LG_i,U,Y} = \frac{1}{\prod_{i=1}^{k} (1 + f_{L_i,U,Y} \times N_{L_i,U,Y})} \quad \text{...[6A.22]}$$

For k = 1, it is seen that the factors here for single and multiple local governments become the same, so that:

$$DF_{MLG\text{-}1,U,Y} = DF_{SLG,U,Y} = (1 + f_{L,U,Y} \times N_{L,U,Y}) \quad \text{...[6A.23]}$$

and

$$CF_{MLG\text{-}1,U,Y} = CF_{SLG,U,Y} = \frac{1}{DF_{SLG,U,Y}} = \frac{1}{(1 + f_{L,U,Y} \times N_{L,U,Y})} \quad \text{...[6A.24]}$$

Sub-national Government Decentralisation and Centralisation Factors

For a generalised government structure hosting k different types of local government, in a polity U, in year Y, a *sub-national government decentralisation factor* ($DF_{SN\text{-}k,U,Y}$) can be defined here

as the product of the corresponding federal unit and local government decentralisation factors, as follows:

$$DF_{SN\text{-}k,U,Y} = DF_{STE,U,Y} \times DF_{MLG\text{-}k,U,Y} \qquad ...[6A.25]$$

So with [6A.13] and [6A.20], [6A.25] becomes:

$$\begin{aligned} DF_{SN\text{-}k,U,Y} &= DF_{STE,U,Y} \times \prod_{i=1}^{k} DF_{LG_i,U,Y} \\ &= (1 + f_{S,U,Y} \times N_{S,U,Y}) \times \prod_{i=1}^{k} (1 + f_{L_i,U,Y} \times N_{L_i,U,Y}) \end{aligned} \qquad ...[6A.26]$$

The corresponding *sub-national government centralisation factor* ($CF_{SN\text{-}k,U,Y}$) can also be defined here as:

$$CF_{SN\text{-}k,U,Y} = CF_{STE,U,Y} \times CF_{MLG\text{-}k,U,Y} \qquad ...[6A.27]$$

So with [6A.14] and [6A.22], [6A.27] becomes:

$$\begin{aligned} CF_{SN\text{-}k,U,Y} &= CF_{STE,U,Y} \times \prod_{i=1}^{k} CF_{LG_i,U,Y} \\ &= \frac{1}{(1 + f_{S,U,Y} \times N_{S,U,Y}) \times \prod_{i=1}^{k} (1 + f_{L_i,U,Y} \times N_{L_i,U,Y})} \end{aligned} \qquad ...[6A.28]$$

For government structures hosting just a single type and level of local government, k = 1 and [6A.25] and [6A.26] as above reduce to the following noting [6A.15] and [6A.23]:

$$\begin{aligned} DF_{SN\text{-}1,U,Y} &= DF_{STE,U,Y} \times DF_{MLG\text{-}1,U,Y} \\ &= DF_{STE,U,Y} \times DF_{SLG,U,Y} \\ &= (1 + f_{S,U,Y} \times N_{S,U,Y})(1 + f_{L,U,Y} \times N_{L,U,Y}) \end{aligned} \qquad ...[6A.29]$$

Results [6A.27] and [6A.28] as above will similarly reduce to [6A.30] as below for government structures hosting just a single type and level of local government (so k = 1):

$$\begin{aligned} CF_{SN\text{-}1,U,Y} &= CF_{STE,U,Y} \times CF_{LG\text{-}1,U,Y} \\ &= CF_{STE,U,Y} \times CF_{SLG,U,Y} \\ &= \frac{1}{(1 + f_{S,U,Y} \times N_{S,U,Y})(1 + f_{L,U,Y} \times N_{L,U,Y})} \end{aligned} \qquad ...[6A.30]$$

Centralisation and Decentralisation Factors Relative to Australia

All centralisation and decentralisation factors defined above can also be defined relative to the Australian value as follows for $CF_{SN\text{-}k,U,Y}$:

$$CF^{AUS}_{SN\text{-}k,U,Y} = \frac{CF_{SN\text{-}k,U,Y}}{CF_{SN,AUS,Y}} \times 100\% \qquad ...[6A.31]$$

Centralisation Index

A centralisation index (CI) was previously defined (Drummond 2002: 54 [note 2]) by the formula:

$$CI = \frac{PS^2}{(1 + f_S \times N_S)(1 + f_L \times N_L)} \qquad ...[6A.32]$$

where: PS was defined as in [6.17] in Chapter 6 again as previously (Drummond 2002: 54 [note 2]);
f_S = State-Territory (or equivalent) own purpose expenditure as a fraction or percentage of total government expenditure;
N_S = the number of State-Territory (or equivalent) type units;
f_L = local government own purpose expenditure as a fraction or percentage of total government expenditure;
N_L = the number of local governments; and
$f_S = N_S = 0$ for unitary countries and the Australian States and Territories (and equivalents) considered as unitary polities.

In an attempt to refine the index defined by [6A.32] above, a new *government structure centralisation index* (CI), or *centralisation index* for short, of polity U, in year Y, with SGP weighting coefficient α, is defined here as follows, for government structures hosting k forms of local governments:

$$CI_{k,U,Y,\alpha} = SGP_{U,Y,\alpha} \times CF_{SN\text{-}k,U,Y} \qquad ...[6A.33]$$

So with $SGP_{U,Y,\alpha}$ and $CF_{SN\text{-}k,U,Y}$ defined by results [6.18] (in Chapter 6) and [6A.28] as above, [6A.33] becomes:

$$CI_{k,U,Y,\alpha} = (P_{U,Y}) \times (A_U)^{\frac{1}{\alpha}} \times CF_{STE,U,Y} \times CF_{MLG\text{-}k,U,Y}$$

$$= \frac{(P_{U,Y}) \times (A_U)^{\frac{1}{\alpha}}}{(1 + f_{S,U,Y} \times N_{S,U,Y}) \times \prod_{i=1}^{k} (1 + f_{L_i,U,Y} \times N_{L_i,U,Y})}$$

$$= \frac{(P_{U,Y}) \times (A_U)^{\frac{1}{\alpha}}}{(1 + f_{S,U,Y} N_{S,U,Y})(1 + f_{L_1,U,Y} N_{L_1,U,Y})(1 + f_{L_2,U,Y} N_{L_2,U,Y}) \ldots (1 + f_{L_k,U,Y} N_{L_k,U,Y})}$$

...[6A.34]

For a government structure with just a single form of local government, k = 1 and [6A.33] and [6A.34] reduce to the following, noting results [6A.14] and [6A.24]:

$$CI_{1,U,Y,\alpha} = SGP_{U,Y,\alpha} \times CF_{SN\text{-}1,U,Y} \quad \ldots[6A.35]$$

and

$$CI_{1,U,Y,\alpha} = (P_{U,Y}) \times (A_U)^{\frac{1}{\alpha}} \times CF_{STE,U,Y} \times CF_{MLG\text{-}1,U,Y}$$

$$= \frac{(P_{U,Y}) \times (A_U)^{\frac{1}{\alpha}}}{(1 + f_{S,U,Y} N_{S,U,Y})(1 + f_{L,U,Y} N_{L,U,Y})} \quad \ldots[6A.36]$$

Geopolitical size, rather than overall political size, is employed in the definition of the centralisation index because the centralisation or decentralisation of a country's government structure refers to the relationship between national and sub-national governments independently of the country's economic strength and performance on the global arena in terms of GDP or related measures.

Decentralisation Index

A *decentralisation index* (DI) can be defined here as simply the reciprocal of the c*entralisation index* (CI), as follows:

$$DI_{k,U,Y,\alpha} = \frac{1}{CI_{k,U,Y,\alpha}} \quad \ldots[6A.37]$$

Centralisation and Decentralisation Indices Relative to Australia

A *centralisation index relative to Australia* ($CI^{AUS}_{k,U,Y,\alpha}$) is now defined as follows, so that the measure for Australia as a whole is 100%, and the measure for other political units is a fraction or multiple of the corresponding value for Australia, expressed as a percentage:

$$CI^{AUS}_{k,U,Y,\alpha} = \frac{CI_{k,U,Y,\alpha}}{CI_{k,AUS,Y,\alpha}} \times 100\% \qquad ...[6A.38]$$

A *decentralisation index relative to Australia* ($DI^{AUS}_{k,U,Y,\alpha}$) is similarly defined as:

$$DI^{AUS}_{k,U,Y,\alpha} = \frac{DI_{k,U,Y,\alpha}}{DI_{k,AUS,Y,\alpha}} \times 100\% \qquad ...[6A.39]$$

Logarithmic Forms of Centralisation and Decentralisation Indices

The centralisation and decentralisation indices defined in [6A.33], [6A.34] and [6A.37] can be converted to a base 10 logarithmic scale in the form of a *logarithmic centralisation index* ($LCI_{k,U,Y,\alpha}$) and *logarithmic decentralisation index* ($LDI_{k,U,Y,\alpha}$) as follows:

$$LCI_{k,U,Y,\alpha} = \log_{10}(CI_{k,U,Y,\alpha}) \qquad ...[6A.40]$$

and

$$LDI_{k,U,Y,\alpha} = \log_{10}(DI_{k,U,Y,\alpha}) \qquad ...[6A.41]$$

But according to the rules of logarithms:

$$\log_{10}(DI_{k,U,Y,\alpha}) = \log_{10}\left(\frac{1}{CI_{k,U,Y,\alpha}}\right) = -\log_{10}(CI_{k,U,Y,\alpha}) \qquad ...[6A.42]$$

So with [6A.42] and [6A.40], [6A.41] becomes:

$$LDI_{k,U,Y,\alpha} = -\log_{10}(CI_{k,U,Y,\alpha}) = -LCI_{k,U,Y,\alpha} \qquad ...[6A.43]$$

Country Comparisons

Table 6A-14 below (see also Drummond 2002: 44; as shown in Appendix 1C) compares Australia and 25 other countries in terms of their populations, land areas, expenditure share fractions f_C, f_S and f_L, numbers of sub-national government units N_S and N_L, geopolitical size relative to Australia ($SGP^{AUS}_{U,Y,\alpha} = SGP^{AUS}_{U,Y,4}$), centralisation factors relative to Australia ($CF^{AUS}_{SN\text{-}k,U,Y} = CF^{AUS}_{SN\text{-}1,U,Y}$), and centralisation indices relative to Australia ($CI^{AUS}_{k,U,Y,\alpha} = CI^{AUS}_{1,U,Y,4}$), assuming k = 1 (so assuming just a single form or level of local government) and α = 4, where $SGP^{AUS}_{U,Y,4}$, $CF^{AUS}_{SN\text{-}1,U,Y}$ and $CI^{AUS}_{1,U,Y,4}$ are all normalised relative to Australian values set to 100.0 as defined above. These country comparisons, and the factors and indices they are based on as defined here, could definitely be refined and improved through further research and analysis.

The k = 1 assumption makes these comparisons more valid among countries with one clearly defined level of local government such as Australia, and less valid for countries with multi-tiered local government. Table 6A-14 and other tables in this appendix are generally likely to more validly compare countries with similar government structures, such as the four classic federations (Australia, the United States, Switzerland and Canada). Comparisons between Australia and China, for example, are likely to be less meaningful, and comparisons between Australia and Singapore, as a further example, are probably always bound to have significant limitations given the immense difference in land areas.

Table 6A-14, despite its limitations, clearly establishes that Australia is by far the most centralised first world federation, and is also more centralised than most unitary countries, according to the centralisation index ($CI^{AUS}_{1,U,Y,4}$) employed here. The Australian States and Northern Territory are also highly centralised in terms of own purpose spending shares. Australia's relatively very high $CI^{AUS}_{1,U,Y,4}$ value derives from its very large geopolitical size ($SGP^{AUS}_{U,Y,4}$) and its local governments being so financially weak and few in number. Australia's high centralisation index value also aligns well with the widely held assessment that Australia indeed has a highly centralised system of government. Lijphart (1984: 80), for example, has observed that the unitary government of Japan is more decentralized than the federal systems of Australia and Austria, and that whereas "there is a strong relationship between federalism and decentralisation and between unitarism and centralization ... there are some notable exceptions, such as the relatively centralized Australian federation and the relatively decentralized but unitary Nordic countries [Sweden, Norway, Finland and Denmark] and Japan" (Lijphart 1984: 177-179).

Table 6A-14: Sub-national Government Structures in Selected Countries (in or about 2000)

Country	Popul-ation (m)	Land Area (sq km)	f_C (%)	f_S (%)	f_L (%)	N_S	N_L	$SGP^{AUS}_{U,Y,4}$	$CF^{AUS}_{SN-1,U,Y}$	$CI^{AUS}_{1,U,Y,4}$
Classic Federations										
Australia	19.6	7,692,030	54.4	39.2	6.4	8	686	100.0	100.0	100.0
Canada	31.4	9,970,610	40.2	42.1	17.7	13	8,000	170.7	2.02	3.45
Switzerland	7.3	41,290	50.8	28.0	21.2	26	2,761	10.0	3.82	0.38
United States	288.6	9,372,000	51.5	22.3	26.2	51	87,525	1543.8	0.0654	1.01
Other Federations										
Austria	8.1	83,850	67.7	16.0	16.3	9	2,350	13.4	19.8	2.65
Belgium	10.3	30,528	56.7	28.7	14.6	6	599	13.1	77.0	10.1
Brazil	174.5	8,512,000	55.4	28.6	15.9	27	5,508	911.2	2.42	22.1
Germany	81.6	357,000	65.2	20.2	14.6	16	15,000	192.8	2.01	3.87
India	1,048.3	3,287,263	50.1	43.9	6.0	35	250,000	4315.3	0.0757	3.27
Malaysia	24.3	329,758	80.9	14.7	4.5	16	144	56.3	747.2	420.8
Nigeria	132.8	923,768	59.6	29.2	11.2	37	774	398.0	17.9	71.4
Russian Federation	144.1	17,075,400	43.0	24.0	33.0	89	12,261	895.4	0.205	1.84
Spain	40.5	504,880	64.0	23.6	12.4	17	8,147	104.5	3.66	3.83
Decentralised Unitary Countries										
Denmark	5.4	43,000	43.5	0.0	56.5	0	289	7.48	113.0	8.46
Finland	5.2	338,000	61.1	0.0	38.9	0	474	12.1	100.1	12.1
Italy	57.5	301,225	73.0	0.0	27.0	0	8,220	130.2	8.37	10.9
Japan	127.4	371,815	25.8	0.0	74.2	0	3,276	304.2	7.64	23.2
Netherlands	16.1	41,000	73.9	0.0	26.1	0	645	22.2	109.5	24.3
Norway	4.5	324,000	61.5	0.0	38.5	0	453	10.5	105.9	11.1
Sweden	8.9	449,700	61.9	0.0	38.1	0	311	22.3	155.3	34.7
United Kingdom and Ireland										
United Kingdom	59.0	244,100	74.5	0.0	25.5	0	467	126.8	154.9	196.4
Ireland	3.9	70,273	74.8	0.0	25.2	0	122	6.13	586.0	35.9
Centralised Unitary Countries										
China	1,281.0	9,571,300	43.6	0.0	56.4	0	60,000	6888.3	0.548	37.8
France	59.5	543,965	81.7	0.0	18.3	0	36,000	156.2	2.81	4.39
New Zealand	3.9	267,844	89.6	0.0	10.4	0	86	8.66	1861.3	161.3
Singapore	4.2	620	100.0	0.0	0.0	0	0	2.01	18571.7	373.1
Australia's STUs as Unitary Polities										
NSW	6.6	800,640	85.7	0.0	14.3	0	172	19.19	727.7	139.6
VIC	4.9	227,420	86.7	0.0	13.3	0	79	10.25	1614.6	165.6
QLD	3.7	1,730,650	81.5	0.0	18.5	0	158	13.01	615.8	80.1
WA	1.9	2,529,880	87.6	0.0	12.4	0	142	7.42	1000.7	74.3
SA	1.5	983,480	89.5	0.0	10.5	0	68	4.62	2277.6	105.3
TAS	0.47	68,400	84.4	0.0	15.6	0	29	0.74	3355.5	24.8
ACT	0.32	2,430	100.0	0.0	0.0	0	0	0.22	18571.7	40.5
NT	0.20	1,349,130	89.5	0.0	10.5	0	38	0.65	3709.1	24.3

Sources: Australian Bureau of Statistics Cat. 5512.0, *Government Finance Statistics*, 2001-02; International Monetary Fund *Government Finance Statistics Yearbook 2002*; United Nations (UN); Organisation for Economic Co-operation and Development (OECD); Commonwealth Local Government Forum; US Census Bureau; other official government websites of various countries; and journal articles as follows: For India: Singh (1997); For Nigeria: Akindele, Olaopa and Obiyan (2002) and Jimoh (2003); For The Russian Federation: Kourliandskaia, Nikolayenko and Golovanova (2001) and Danielian (2002).

Tables 6A-15 to 6A-20 now provide further comparisons among the 26 selected countries in terms of the measures defined above.

Table 6A-15: Decentralisation Factors and Other Measures of Australia and 25 Other Countries in Approximately 2002

Country (U)	$P_{U,Y}$ (in millions)	A_U (in km^2)	$pd_{U,Y}$ (people per km^2)	f_C	f_S	f_L	N_S	N_L	DF_{STE}	DF_L	$DF_{SUBNAT-1}$
Australia	19.641	7,692,030	2.55	54.4	39.2	6.4	8	686	4.14	44.88	185.72
Canada	31.414	9,970,610	3.15	40.2	42.1	17.7	13	8000	6.47	1418.04	9174.58
Switzerland	7.291	41,290	176.58	50.8	28.0	21.2	26	2761	8.28	587.33	4864.99
United States	288.600	9,372,000	30.79	51.5	22.3	26.2	51	87525	12.38	22938.62	284040.16
Austria	8.139	83,850	97.07	67.7	16.0	16.3	9	2350	2.44	384.14	938.42
Belgium	10.269	30,528	336.38	56.7	28.7	14.6	6	599	2.72	88.70	241.24
Brazil	174.485	8,512,000	20.50	55.4	28.6	15.9	27	5508	8.73	877.17	7661.11
Germany	81.568	357,000	228.48	65.2	20.2	14.6	16	15000	4.24	2183.72	9258.98
India	1,048.279	3,287,263	318.89	50.1	43.9	6.0	35	250000	16.36	15001.00	245342.50
Malaysia	24.305	329,758	73.71	80.9	14.7	4.5	16	144	3.35	7.42	24.85
Nigeria	132.785	923,768	143.74	59.6	29.2	11.2	37	774	11.80	87.69	1035.07
Russian Federation	144.071	17,075,400	8.44	43.0	24.0	33.0	89	12261	22.36	4047.13	90493.83
Spain	40.546	504,880	80.31	64.0	23.6	12.4	17	8147	5.01	1011.16	5070.98
Denmark	5.374	43,000	124.98	43.5	0.0	56.5	0	289	1.00	164.33	164.33
Finland	5.201	338,000	15.39	61.1	0.0	38.9	0	474	1.00	185.45	185.45
Italy	57.474	301,225	190.80	73.0	0.0	27.0	0	8220	1.00	2218.15	2218.15
Japan	127.435	371,815	342.74	25.8	0.0	74.2	0	3276	1.00	2431.79	2431.79
Netherlands	16.105	41,000	392.80	73.9	0.0	26.1	0	645	1.00	169.54	169.54
Norway	4.538	324,000	14.01	61.5	0.0	38.5	0	453	1.00	175.31	175.31
Sweden	8.925	449,700	19.85	61.9	0.0	38.1	0	311	1.00	119.57	119.57
United Kingdom	59.008	244,100	241.74	74.5	0.0	25.5	0	467	1.00	119.90	119.90
Ireland	3.897	70,273	55.46	74.8	0.0	25.2	0	122	1.00	31.69	31.69
China	1,280.975	9,571,300	133.84	43.6	0.0	56.4	0	60000	1.00	33869.74	33869.74
France	59.482	543,965	109.35	81.7	0.0	18.3	0	36000	1.00	6605.34	6605.34
New Zealand	3.939	267,844	14.71	89.6	0.0	10.4	0	86	1.00	9.98	9.98
Singapore	4.164	620	6,716	100.0	0.0	0.0	0	0	1.00	1.00	1.00

Table 6A-16: Decentralisation Factors and Other Measures Relative to Australia of Selected Countries in Approximately 2002

Country (U)	$P_{U,Y}$	A_U	$pd_{U,Y}$	f_C	f_S	f_L	N_S	N_L	DF_{STE}	DF_L	$DF_{SUBNAT-1}$
Australia	100.00	100.00	100.00	100.00	100.00	100.00	100	100	100.00	100.00	100.00
Canada	159.94	129.62	123.39	73.95	107.27	276.91	163	1,166	156.35	3,159.55	4,940.08
Switzerland	37.12	0.54	6,915.44	93.33	71.41	331.99	325	402	200.17	1,308.64	2,619.57
United States	1,469.38	121.84	1,205.98	94.66	56.90	409.70	638	12,759	299.24	51,109.76	152,942.24
Austria	41.44	1.09	3,801.42	124.43	40.87	254.88	113	343	59.04	855.90	505.29
Belgium	52.28	0.40	13,173.70	104.27	73.07	228.90	75	87	65.72	197.64	129.90
Brazil	888.37	110.66	802.79	101.97	73.03	248.68	338	803	211.07	1,954.43	4,125.15
Germany	415.29	4.64	8,948.07	119.90	51.63	227.49	200	2,187	102.47	4,865.58	4,985.53
India	5,337.20	42.74	12,488.79	92.18	111.85	93.80	438	36,443	395.24	33,423.87	132,105.38
Malaysia	123.75	4.29	2,886.54	148.71	37.41	69.74	200	21	80.90	16.54	13.38
Nigeria	676.06	12.01	5,629.42	109.60	74.44	175.09	463	113	285.26	195.38	557.34
Russian Federation	733.52	221.99	330.43	79.08	61.19	515.89	1,113	1,787	540.36	9,017.45	48,726.66
Spain	206.44	6.56	3,145.12	117.66	60.21	193.84	213	1,188	121.19	2,252.98	2,730.48
Denmark	27.36	0.56	4,894.49	79.96	0.00	883.53	0	42	24.17	366.15	88.49
Finland	26.48	4.39	602.63	112.33	0.00	608.35	0	69	24.17	413.21	99.86
Italy	292.62	3.92	7,472.37	134.29	0.00	421.67	0	1,198	24.17	4,942.27	1,194.37
Japan	648.82	4.83	13,422.69	47.45	0.00	1,159.98	0	478	24.17	5,418.30	1,309.41
Netherlands	82.00	0.53	15,383.48	135.84	0.00	408.51	0	94	24.17	377.76	91.29
Norway	23.10	4.21	548.53	113.14	0.00	601.54	0	66	24.17	390.60	94.39
Sweden	45.44	5.85	777.25	113.78	0.00	596.03	0	45	24.17	266.42	64.38
United Kingdom	300.43	3.17	9,467.19	137.07	0.00	398.04	0	68	24.17	267.16	64.56
Ireland	19.84	0.91	2,171.80	137.63	0.00	393.30	0	18	24.17	70.61	17.07
China	6,521.95	124.43	5,241.40	80.09	0.00	882.46	0	8,746	24.17	75,465.49	18,237.26
France	302.85	7.07	4,282.45	150.16	0.00	286.80	0	5,248	24.17	14,717.43	3,556.67
New Zealand	20.06	3.48	575.95	164.70	0.00	163.20	0	13	24.17	22.23	5.37
Singapore	21.20	0.01	263,024.90	183.90	0.00	0.00	0	0	24.17	2.23	0.54

Table 6A-17: Rank Ordering of Decentralisation Factors and Other Measures in Approximately 2002

Country (U)	$P_{U,Y}$	A_U	$pd_{U,Y}$	f_C	f_S	f_L	N_S	N_L	DF_{STE}	DF_L	$DF_{SUBNAT-1}$
Australia	15	6	26	18	3	23	12	15	10	22	16
Canada	13	2	25	25	2	15	10	9	7	9	6
Switzerland	20	23	9	20	7	13	6	12	6	12	10
United States	3	4	18	19	10	9	2	2	3	2	1
Austria	19	20	14	9	12	16	11	13	13	13	14
Belgium	17	25	4	16	5	18	13	17	12	20	15
Brazil	4	5	19	17	6	17	5	10	5	11	7
Germany	8	13	7	10	11	19	8	5	9	8	5
India	2	7	5	21	1	24	4	1	2	3	2
Malaysia	14	15	16	4	13	25	8	23	11	25	24
Nigeria	6	8	10	15	4	21	3	14	4	21	13
Russian Federation	5	1	24	24	8	7	1	6	1	5	3
Spain	12	10	15	11	9	20	7	8	8	10	9
Denmark	21	22	12	23	14	2	14	22	14	17	20
Finland	22	14	21	14	14	4	14	18	14	14	17
Italy	11	17	8	8	14	8	14	7	14	7	12
Japan	7	12	3	26	14	1	14	11	14	6	11
Netherlands	16	24	2	7	14	10	14	16	14	16	19
Norway	23	16	23	13	14	5	14	20	14	15	18
Sweden	18	11	20	12	14	6	14	21	14	19	22
United Kingdom	10	19	6	6	14	11	14	19	14	18	21
Ireland	26	21	17	5	14	12	14	24	14	23	23
China	1	3	11	22	14	3	14	3	14	1	4
France	9	9	13	3	14	14	14	4	14	4	8
New Zealand	25	18	22	2	14	22	14	25	14	24	25
Singapore	24	26	1	1	14	26	14	26	14	26	26

Table 6A-18: Centralisation Indices ($CI_{U,Y,\alpha}$) of Australia and 25 Other Countries in Approximately 2002

Country (U)	$CI_{U,Y,1,2}$	$CI_{U,Y,2,2}$	$CI_{U,Y,3.2}$	$CI_{U,Y,4,2}$	$CI_{U,Y,5,2}$	$CI_{U,Y,6,2}$	$CI_{U,Y,7,2}$	$CI_{U,Y,8,2}$	$CI_{U,Y,9,2}$	$CI_{U,Y,10,2}$	$CI_{U,Y,\infty,2}$
Australia	8.135E+11	2.933E+08	2.088E+07	5.570E+06	2.521E+06	1.486E+06	1.019E+06	7.675E+05	6.158E+05	5.163E+05	1.058E+05
Canada	3.414E+10	1.081E+07	7.370E+05	1.924E+05	8.596E+04	5.023E+04	3.423E+04	2.567E+04	2.052E+04	1.716E+04	3.424E+03
Switzerland	6.188E+07	3.045E+05	5.180E+04	2.136E+04	1.256E+04	8.811E+03	6.841E+03	5.658E+03	4.882E+03	4.338E+03	1.499E+03
United States	9.522E+09	3.111E+06	2.142E+05	5.622E+04	2.519E+04	1.475E+04	1.007E+04	7.558E+03	6.047E+03	5.059E+03	1.016E+03
Austria	7.272E+08	2.511E+06	3.796E+05	1.476E+05	8.373E+04	5.738E+04	4.381E+04	3.578E+04	3.057E+04	2.695E+04	8.673E+03
Belgium	1.299E+09	7.437E+06	1.330E+06	5.627E+05	3.357E+05	2.380E+05	1.861E+05	1.548E+05	1.341E+05	1.195E+05	4.257E+04
Brazil	1.939E+11	6.645E+07	4.650E+06	1.230E+06	5.540E+05	3.254E+05	2.226E+05	1.674E+05	1.341E+05	1.123E+05	2.278E+04
Germany	3.145E+09	5.264E+06	6.250E+05	2.153E+05	1.136E+05	7.420E+04	5.473E+04	4.356E+04	3.647E+04	3.164E+04	8.810E+03
India	1.405E+10	7.747E+06	6.353E+05	1.819E+05	8.592E+04	5.210E+04	3.645E+04	2.788E+04	2.264E+04	1.916E+04	4.273E+03
Malaysia	3.225E+11	5.616E+08	6.756E+07	2.343E+07	1.241E+07	8.128E+06	6.006E+06	4.787E+06	4.013E+06	3.484E+06	9.779E+05
Nigeria	1.185E+11	1.233E+08	1.249E+07	3.977E+06	2.001E+06	1.266E+06	9.129E+05	7.143E+05	5.902E+05	5.067E+05	1.283E+05
Russian Federation	2.718E+10	6.579E+06	4.100E+05	1.023E+05	4.451E+04	2.555E+04	1.719E+04	1.276E+04	1.013E+04	8.418E+03	1.592E+03
Spain	4.037E+09	5.681E+06	6.367E+05	2.131E+05	1.105E+05	7.135E+04	5.219E+04	4.128E+04	3.440E+04	2.973E+04	7.996E+03
Denmark	1.406E+09	6.781E+06	1.146E+06	4.709E+05	2.762E+05	1.936E+05	1.501E+05	1.241E+05	1.070E+05	9.504E+04	3.270E+04
Finland	9.479E+09	1.630E+07	1.954E+06	6.762E+05	3.578E+05	2.341E+05	1.729E+05	1.377E+05	1.154E+05	1.002E+05	2.804E+04
Italy	7.805E+09	1.422E+07	1.737E+06	6.070E+05	3.230E+05	2.121E+05	1.571E+05	1.254E+05	1.053E+05	9.149E+04	2.591E+04
Japan	1.948E+10	3.195E+07	3.768E+06	1.294E+06	6.814E+05	4.444E+05	3.274E+05	2.604E+05	2.179E+05	1.890E+05	5.240E+04
Netherlands	3.895E+09	1.923E+07	3.275E+06	1.352E+06	7.948E+05	5.578E+05	4.332E+05	3.583E+05	3.092E+05	2.748E+05	9.499E+04
Norway	8.387E+09	1.473E+07	1.778E+06	6.176E+05	3.275E+05	2.145E+05	1.586E+05	1.264E+05	1.060E+05	9.207E+04	2.589E+04
Sweden	3.357E+10	5.005E+07	5.719E+06	1.933E+06	1.008E+06	6.533E+05	4.792E+05	3.798E+05	3.170E+05	2.743E+05	7.464E+04
United Kingdom	1.201E+11	2.431E+08	3.076E+07	1.094E+07	5.883E+06	3.891E+06	2.896E+06	2.320E+06	1.953E+06	1.702E+06	4.921E+05
Ireland	8.641E+09	3.260E+07	5.074E+06	2.002E+06	1.146E+06	7.899E+05	6.056E+05	4.962E+05	4.249E+05	3.754E+05	1.230E+05
China	3.620E+11	1.170E+08	8.030E+06	2.104E+06	9.417E+05	5.511E+05	3.758E+05	2.821E+05	2.256E+05	1.887E+05	3.782E+04
France	4.898E+09	6.642E+06	7.351E+05	2.446E+05	1.264E+05	8.136E+04	5.941E+04	4.693E+04	3.906E+04	3.373E+04	9.005E+03
New Zealand	1.057E+11	2.043E+08	2.545E+07	8.981E+06	4.808E+06	3.170E+06	2.354E+06	1.883E+06	1.583E+06	1.378E+06	3.948E+05
Singapore	2.582E+09	1.037E+08	3.551E+07	2.078E+07	1.507E+07	1.216E+07	1.043E+07	9.302E+06	8.507E+06	7.920E+06	4.164E+06

Table 6A-19: Centralisation Indices Relative to Australia ($CI^{AUS}_{U,Y,\alpha}$) of Selected Countries in Approximately 2002

Country (U)	$CI_{U,Y,1,2}$	$CI_{U,Y,2,2}$	$CI_{U,Y,3.2}$	$CI_{U,Y,4,2}$	$CI_{U,Y,5,2}$	$CI_{U,Y,6,2}$	$CI_{U,Y,7,2}$	$CI_{U,Y,8,2}$	$CI_{U,Y,9,2}$	$CI_{U,Y,10,2}$	$CI_{U,Y,\infty,2}$
Australia	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Canada	4.20	3.69	3.53	3.45	3.41	3.38	3.36	3.34	3.33	3.32	3.24
Switzerland	0.00761	0.104	0.248	0.384	0.498	0.593	0.672	0.737	0.793	0.840	1.42
United States	1.17	1.06	1.03	1.01	1.00	0.993	0.988	0.985	0.982	0.980	0.961
Austria	0.0894	0.856	1.82	2.65	3.32	3.86	4.30	4.66	4.96	5.22	8.20
Belgium	0.160	2.54	6.37	10.10	13.32	16.02	18.27	20.16	21.77	23.15	40.25
Brazil	23.83	22.65	22.28	22.09	21.98	21.90	21.85	21.81	21.78	21.75	21.54
Germany	0.387	1.79	2.99	3.87	4.51	4.99	5.37	5.68	5.92	6.13	8.33
India	1.73	2.64	3.04	3.27	3.41	3.51	3.58	3.63	3.68	3.71	4.04
Malaysia	39.64	191.46	323.63	420.76	492.52	547.04	589.64	623.75	651.64	674.85	924.68
Nigeria	14.57	42.04	59.85	71.41	79.39	85.20	89.61	93.07	95.85	98.13	121.30
Russian Federation	3.34	2.24	1.96	1.84	1.77	1.72	1.69	1.66	1.64	1.63	1.51
Spain	0.496	1.94	3.05	3.83	4.39	4.80	5.12	5.38	5.59	5.76	7.56
Denmark	0.173	2.31	5.49	8.46	10.96	13.03	14.74	16.17	17.38	18.41	30.92
Finland	1.17	5.56	9.36	12.14	14.19	15.75	16.97	17.94	18.74	19.40	26.52
Italy	0.959	4.85	8.32	10.90	12.82	14.28	15.42	16.34	17.09	17.72	24.50
Japan	2.40	10.89	18.05	23.23	27.03	29.91	32.14	33.93	35.39	36.60	49.55
Netherlands	0.479	6.56	15.69	24.27	31.53	37.54	42.52	46.69	50.21	53.22	89.82
Norway	1.03	5.02	8.52	11.09	12.99	14.44	15.57	16.47	17.22	17.83	24.48
Sweden	4.13	17.07	27.39	34.70	40.00	43.97	47.04	49.49	51.48	53.13	70.58
United Kingdom	14.77	82.90	147.33	196.40	233.39	261.83	284.25	302.31	317.15	329.55	465.34
Ireland	1.06	11.11	24.31	35.95	45.46	53.16	59.45	64.65	69.00	72.70	116.27
China	44.50	39.89	38.46	37.77	37.36	37.09	36.90	36.75	36.64	36.55	35.76
France	0.602	2.26	3.52	4.39	5.01	5.48	5.83	6.11	6.34	6.53	8.51
New Zealand	13.00	69.66	121.90	161.25	190.73	213.31	231.07	245.34	257.06	266.83	373.29
Singapore	0.317	35.35	170.08	373.07	597.68	818.32	1024.22	1211.98	1381.50	1534.03	3937.31

Table 6A-20: Rank Ordering of Selected Countries by Centralisation Index ($CI_{U,Y,\alpha}$) in Approximately 2002

Country (U)	$CI_{U,Y,1,2}$	$CI_{U,Y,2,2}$	$CI_{U,Y,3.2}$	$CI_{U,Y,4,2}$	$CI_{U,Y,5,2}$	$CI_{U,Y,6,2}$	$CI_{U,Y,7,2}$	$CI_{U,Y,8,2}$	$CI_{U,Y,9,2}$	$CI_{U,Y,10,2}$	$CI_{U,Y,\infty,2}$
Australia	5	7	1	2	5	5	5	5	5	5	5
Canada	23	23	8	16	18	21	21	23	23	23	23
Switzerland	26	25	26	26	26	26	26	26	26	26	26
United States	25	26	13	24	25	25	25	25	25	25	25
Austria	21	20	25	25	24	23	23	21	21	21	21
Belgium	12	11	24	18	16	16	14	13	13	13	13
Brazil	13	17	4	8	10	12	12	12	12	12	12
Germany	19	19	21	23	22	19	19	19	19	19	19
India	22	22	12	17	21	22	22	22	22	22	22
Malaysia	2	2	3	1	1	1	2	2	2	2	2
Nigeria	6	5	6	5	6	6	6	6	6	6	6
Russian Federation	24	24	10	21	23	24	24	24	24	24	24
Spain	20	21	19	22	20	20	20	20	20	20	20
Denmark	15	13	23	19	17	17	17	17	17	17	15
Finland	14	14	14	13	13	13	13	14	14	14	14
Italy	17	15	17	15	15	15	16	16	16	16	17
Japan	10	10	11	11	11	11	11	11	11	11	11
Netherlands	8	8	20	12	12	10	10	9	9	9	9
Norway	16	16	16	14	14	14	15	15	15	15	16
Sweden	9	9	9	9	8	9	8	8	8	8	8
United Kingdom	3	3	5	3	3	3	3	3	3	3	3
Ireland	7	6	15	10	9	8	7	7	7	7	7
China	11	12	2	6	7	7	9	10	10	10	10
France	18	18	18	20	19	18	18	18	18	18	18
New Zealand	4	4	7	4	4	4	4	4	4	4	4
Singapore	1	1	22	7	2	2	1	1	1	1	1

Bibliography for Appendix 6A

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