

Attachment 2

Supplemental Report

A handwritten signature in black ink, appearing to read "Stephen Ansolabehere", is written over a horizontal line.

Stephen Ansolabehere

June 13, 2022

1. I have been asked to conduct an analysis of the voting patterns of racial groups in each of the Congressional Districts in the State of Texas and for each of the Texas State House Districts in Harris and Tarrant Counties. This analysis supplements the analyses provided in my Expert Report dated May 20, 2022.
2. My qualifications, my compensation, and the nature of my engagement are presented in my May 20 Expert Report..
3. On May 23, after I finalized my May 20 Expert Report, the Court entered an order that clarified the standards the Court will apply in assessing racially polarized voting. In particular, the Court explained that it will assess minority cohesion for proposed districts but will assess majority bloc voting for the challenged districts. ECF No. 307 at 33. To ensure that the Court has all the data it may need to assess racially polarized voting in this case, I was therefore asked to analyze racially polarized voting for each of the enacted Congressional districts in Texas, and for each of the enacted Texas House districts in Harris and Tarrant Counties.
4. As I did in my May 20 Expert Report, I use Ecological Regression (ER) and Ecological Inference (EI) procedures to estimate the vote preferences of non-Hispanic Whites, non-Hispanic Blacks, and Hispanics in each of the districts examined. I use the same data, methods, and estimation procedures as described in my May 20 Expert Report.
5. The EI estimates presented here are not identical to those in my Expert Report because of the way that EI derives estimates. EI estimates the parameters of a non-linear function for which no exact solution is possible. Each time the program is run slightly different results can, and typically do, emerge. The estimates presented here are for an entirely new run of the EI algorithm and, therefore, differ slightly from what is presented in my earlier report. None of the differences are material.

6. Tables 1 and 2 are the EI and ER estimates, respectively, for the Enacted Congressional Districts for the State of Texas.
7. Tables 3 and 4 are the EI and ER estimates, respectively for the Enacted Texas State House Districts in Harris and Tarrant Counties.

Table 1: Enacted: General Election Vote Preference By Racial Group - EI Estimates Congressional Districts

District	Percent Democratic						Polarization	
	White	[min,max]	Black	[min,max]	Hispanic	[min,max]	B-W	H-W
1	8	[6, 12]	88	[84, 92]	80	[76, 83]	80	72
2	19	[7, 26]	84	[61, 89]	66	[51, 87]	65	47
3	21	[13, 30]	78	[66, 86]	74	[53, 84]	57	54
4	14	[8, 26]	79	[65, 89]	78	[71, 84]	66	65
5	11	[9, 13]	87	[42, 91]	87	[51, 92]	77	76
6	12	[9, 16]	82	[76, 87]	86	[84, 89]	69	74
7	56	[42, 66]	78	[69, 85]	73	[57, 88]	22	17
8	10	[7, 22]	80	[63, 86]	84	[73, 89]	70	74
9	51	[42, 59]	96	[90, 97]	81	[69, 86]	45	30
10	23	[18, 29]	77	[72, 81]	78	[66, 85]	54	55
11	9	[6, 19]	89	[73, 93]	72	[56, 84]	80	63
12	22	[13, 28]	83	[77, 88]	77	[67, 83]	61	55
13	17	[12, 35]	72	[63, 81]	70	[61, 80]	55	54
14	13	[10, 16]	92	[91, 93]	79	[75, 83]	79	66
15	11	[9, 13]	47	[27, 62]	76	[63, 86]	36	65
16	26	[16, 44]	50	[37, 60]	84	[77, 90]	24	58
17	16	[13, 21]	83	[80, 88]	87	[84, 89]	67	71
18	51	[38, 61]	96	[95, 97]	77	[66, 85]	45	27
19	12	[9, 18]	76	[58, 82]	70	[56, 78]	63	58
20	36	[24, 52]	67	[39, 77]	84	[78, 89]	31	48
21	25	[17, 35]	77	[66, 88]	76	[59, 87]	52	51
22	18	[10, 28]	83	[77, 88]	56	[37, 74]	65	38
23	21	[14, 28]	59	[40, 74]	74	[60, 82]	38	53
24	30	[18, 40]	64	[49, 81]	68	[55, 82]	34	38
25	14	[11, 18]	91	[89, 93]	78	[72, 86]	77	64
26	19	[13, 28]	81	[72, 87]	76	[56, 88]	63	58
27	13	[10, 15]	63	[48, 72]	86	[80, 90]	50	73
28	18	[11, 25]	88	[84, 90]	78	[66, 92]	70	61
29	39	[28, 50]	88	[85, 90]	84	[70, 92]	49	45
30	54	[39, 68]	95	[70, 97]	80	[73, 87]	42	27
31	22	[16, 29]	61	[44, 70]	82	[75, 87]	38	60
32	54	[42, 63]	81	[68, 92]	85	[71, 89]	27	31
33	54	[42, 62]	93	[91, 94]	88	[82, 91]	39	34
34	22	[13, 31]	49	[29, 68]	76	[64, 85]	27	54

35	64	[45, 74]	78	[69, 86]	83	[76, 88]	14	20
36	12	[10, 19]	85	[81, 89]	78	[61, 85]	73	66
37	77	[69, 83]	75	[63, 87]	66	[58, 76]	-2	-11
38	23	[13, 33]	65	[51, 80]	65	[50, 81]	42	42

Notes: Ecological Inference (EI) results estimated using the EI package in R. The “[min,max]” columns report the minimum and maximum estimated percent of each racial group’s Democratic support across all elections analyzed.

Table 2: Enacted Map: General Election Vote Preference By Racial Group - ER Estimates

District	Percent Democratic						Polarization	
	White	CI	Black	CI	Hispanic	CI	B-W	H-W
1	2	[1, 3]	100	[99, 100]	100	[96, 100]	98	98
2	13	[12, 14]	100	[98, 100]	95	[91, 99]	87	82
3	17	[15, 19]	100	[96, 100]	70	[65, 76]	83	53
4	9	[8, 11]	100	[96, 100]	100	[94, 100]	91	91
5	7	[6, 8]	100	[97, 100]	100	[97, 100]	93	93
6	4	[3, 5]	100	[97, 100]	100	[97, 100]	96	96
7	50	[49, 51]	97	[95, 99]	96	[93, 99]	47	46
8	6	[5, 7]	100	[96, 100]	100	[97, 100]	94	94
9	30	[29, 31]	100	[99, 100]	78	[75, 80]	70	48
10	19	[17, 21]	87	[84, 90]	100	[96, 100]	68	81
11	0	[0, 1]	100	[98, 100]	51	[49, 54]	100	51
12	16	[14, 17]	100	[98, 100]	100	[97, 100]	84	84
13	9	[7, 11]	.	[., .]	59	[56, 62]	.	50
14	4	[3, 5]	100	[99, 100]	73	[68, 78]	96	69
15	0	[0, 1]	.	[., .]	74	[74, 75]	.	74
16	17	[15, 18]	.	[., .]	81	[80, 83]	.	65
17	5	[4, 6]	100	[97, 100]	100	[97, 100]	95	95
18	38	[37, 39]	100	[99, 100]	47	[45, 50]	62	9
19	9	[8, 10]	.	[., .]	51	[49, 52]	.	42
20	28	[26, 29]	.	[., .]	81	[80, 82]	.	53
21	19	[17, 20]	100	[93, 100]	85	[83, 86]	81	66
22	12	[10, 14]	100	[97, 100]	38	[35, 41]	88	26
23	11	[10, 12]	.	[., .]	70	[69, 71]	.	59
24	25	[24, 27]	100	[97, 100]	97	[95, 100]	75	72
25	7	[7, 8]	100	[99, 100]	100	[95, 100]	93	93
26	13	[12, 15]	100	[97, 100]	100	[95, 100]	87	87
27	4	[4, 5]	.	[., .]	76	[76, 77]	.	72
28	7	[6, 8]	.	[., .]	76	[75, 77]	.	69
29	34	[32, 36]	89	[87, 90]	72	[70, 73]	54	37
30	42	[41, 43]	99	[99, 100]	60	[58, 63]	58	19
31	18	[16, 20]	100	[95, 100]	100	[96, 100]	82	82
32	42	[41, 43]	100	[99, 100]	100	[98, 100]	58	58
33	39	[38, 40]	93	[92, 94]	82	[81, 83]	54	43

34	9	[7, 10]	.	[., .]	73	[72, 74]	.	64
35	49	[47, 51]	94	[91, 97]	80	[78, 82]	45	31
36	7	[6, 8]	100	[98, 100]	74	[72, 77]	93	67
37	65	[63, 67]	100	[95, 100]	100	[97, 100]	35	35
38	18	[16, 19]	100	[96, 100]	94	[91, 97]	82	76

Notes: "CI" stands for 95% confidence intervals. Missing values indicate insufficient data for estimates.

Table 3: Enacted Map: General Election Vote Preference By Racial Group - EI Estimates - State House Districts

District	Percent Democratic						Polarization	
	White	[min,max]	Black	[min,max]	Hispanic	[min,max]	B-W	H-W
Tarrant								
90	52	[37, 59]	86	[80, 92]	86	[80, 90]	34	34
91	27	[20, 33]	56	[41, 67]	67	[59, 75]	29	40
92	48	[38, 58]	83	[78, 87]	76	[66, 86]	34	28
93	24	[13, 35]	51	[41, 62]	69	[51, 76]	27	45
94	33	[24, 40]	64	[51, 76]	66	[47, 80]	31	34
95	44	[32, 54]	94	[90, 95]	81	[76, 86]	49	37
96	24	[18, 30]	79	[72, 87]	64	[54, 72]	55	40
97	32	[23, 41]	71	[63, 86]	59	[48, 73]	38	27
98	23	[13, 33]	61	[47, 75]	65	[56, 77]	38	42
99	27	[17, 35]	81	[78, 88]	67	[55, 75]	54	39
101	61	[45, 78]	81	[73, 90]	55	[41, 69]	20	-7
Harris								
126	17	[10, 26]	59	[37, 74]	66	[40, 85]	42	48
127	20	[10, 28]	83	[74, 90]	80	[68, 90]	63	60
128	12	[5, 18]	76	[53, 84]	60	[46, 71]	64	48
129	28	[19, 37]	67	[57, 75]	55	[46, 66]	39	27
130	16	[6, 26]	54	[39, 69]	57	[40, 75]	38	41
131	57	[44, 68]	94	[91, 97]	83	[73, 90]	38	26
132	26	[17, 38]	51	[33, 64]	53	[27, 67]	26	27
133	30	[17, 53]	76	[63, 91]	73	[49, 82]	46	44
134	52	[39, 63]	70	[62, 79]	64	[30, 81]	18	12
135	45	[34, 57]	73	[52, 84]	71	[52, 83]	28	26
137	56	[43, 64]	80	[66, 88]	77	[52, 89]	24	21
138	29	[20, 43]	60	[48, 72]	69	[58, 80]	31	40
139	40	[32, 50]	96	[93, 97]	87	[82, 93]	56	47
140	48	[36, 56]	88	[83, 93]	84	[71, 93]	41	36
141	48	[21, 55]	96	[93, 97]	79	[60, 88]	48	30
142	32	[20, 41]	93	[91, 95]	80	[71, 85]	61	48
143	28	[16, 56]	85	[79, 93]	80	[68, 87]	57	51

144	36	[8, 50]	65	[53, 83]	77	[61, 88]	29	41
145	59	[47, 70]	79	[72, 88]	85	[75, 91]	20	26
146	57	[44, 65]	97	[95, 98]	78	[72, 87]	40	21
147	69	[55, 80]	96	[95, 97]	71	[56, 79]	27	2
148	46	[36, 55]	68	[58, 76]	70	[59, 84]	21	23
149	56	[42, 76]	74	[54, 83]	69	[47, 85]	18	13
150	22	[12, 39]	66	[43, 78]	64	[44, 83]	44	42

Notes: Ecological Inference (EI) results estimated using the EI package in R. The “[min,max]” columns report the minimum and maximum estimated percent of each racial group’s Democratic support across all elections analyzed.

Table 4: Enacted Map: General Election Vote Preference By Racial Group - ER Estimates - State House Districts

District	Percent Democratic						Polarization	
	White	CI	Black	CI	Hispanic	CI	B-W	H-W
Tarrant								
90	36	[35, 38]	81	[79, 84]	85	[84, 87]	45	49
91	24	[21, 26]	95	[87, 100]	78	[74, 81]	71	54
92	25	[23, 26]	100	[97, 100]	100	[95, 100]	75	75
93	22	[19, 25]	51	[43, 58]	82	[77, 86]	29	60
94	24	[22, 26]	100	[97, 100]	100	[94, 100]	76	76
95	26	[24, 27]	100	[99, 100]	79	[73, 85]	74	53
96	16	[14, 17]	100	[97, 100]	100	[91, 100]	84	84
97	26	[24, 29]	100	[97, 100]	79	[72, 86]	74	52
98	19	[16, 22]	100	[94, 100]	100	[94, 100]	81	81
99	19	[17, 22]	100	[97, 100]	74	[70, 79]	81	55
101	46	[43, 48]	87	[85, 89]	57	[53, 61]	41	11
Harris								
126	13	[10, 15]	100	[95, 100]	95	[88, 100]	87	82
127	11	[9, 13]	100	[97, 100]	100	[94, 100]	89	89
128	2	[0, 5]	100	[96, 100]	78	[72, 84]	98	76
129	27	[25, 30]	100	[95, 100]	57	[54, 61]	73	30
130	12	[9, 15]	100	[93, 100]	80	[72, 87]	88	68
131	24	[19, 29]	100	[97, 100]	81	[77, 85]	76	57
132	18	[15, 22]	100	[93, 100]	79	[70, 88]	82	61
133	19	[16, 21]	100	[97, 100]	100	[90, 100]	81	81
134	42	[38, 47]	100	[93, 100]	91	[81, 100]	58	48
135	21	[18, 24]	100	[94, 100]	93	[86, 99]	79	72
137	29	[25, 33]	100	[96, 100]	84	[79, 90]	71	55
138	22	[20, 23]	100	[92, 100]	92	[89, 94]	78	70
139	23	[22, 25]	100	[99, 100]	76	[68, 84]	77	53
140	25	[20, 31]	100	[98, 100]	66	[64, 69]	75	41
141	0	[0, 3]	100	[98, 100]	57	[53, 61]	100	57
142	3	[0, 5]	100	[98, 100]	64	[58, 69]	97	61
143	6	[3, 8]	84	[81, 87]	74	[72, 77]	79	69

144	11	[7, 14]	58	[52, 64]	69	[67, 72]	47	59
145	55	[54, 56]	100	[96, 100]	82	[81, 83]	45	26
146	39	[38, 40]	100	[99, 100]	54	[47, 61]	61	15
147	58	[57, 60]	100	[99, 100]	55	[52, 59]	42	-3
148	33	[31, 36]	75	[71, 79]	74	[71, 77]	42	41
149	37	[33, 40]	100	[95, 100]	68	[61, 74]	63	31
150	9	[6, 12]	100	[95, 100]	100	[93, 100]	91	91

Notes: "CI" stands for 95% confidence intervals. Missing values indicate insufficient data for estimates.