On-line Appendix for "The Conservative Policy Bias of Senate Malapportionment" (Johnson & Miller, *PS*)

Senate reapportionment based on 2010 census, net shift compared to equal rep.

Largest states with majority	Population	Seats	Intermediate states	Population	Seats	Smallest majority	Population	Seats
CA	37,253,956	10	NC	9,535,483	3	LA	4,533,372	1
TX	25,145,561	7	NJ	8,791,894	3	KY	4,339,367	1
NY	19,378,102	5	VA	8,001,024	2	OR	3,831,074	1
FL	18,801,310	5	WA	6,724,540	2	OK	3,751,351	1
IL	12,830,632	4	MA	6,547,629	2	CT	3,574,097	1
PA	12,702,379	4	IN	6,483,802	2	IA	3,046,355	1
OH	11,536,504	3	AZ	6,392,017	2	MS	2,967,297	1
MI	9,883,640	3	TN	6,346,105	2	AR	2,915,918	1
GA	9,687,653	3	MO	5,988,927	2	KS	2,853,118	1
	51.0%	44	MD	5,773,552	2	UT	2,763,885	1
Net shift		+26	WI	5,686,986	2	NV	2,700,551	1
			MN	5,303,925	2	NM	2,059,179	1
			CO	5,029,196	2	WV	1,852,994	1
			AL	4,779,736	1	NE	1,826,341	1
			SC	4,625,364	1	ID	1,567,582	1
				31.2%	30	HI	1,360,301	1

			Net change		0	ME	1,328,361	1
						NH	1,316,470	1
						RI	1,052,567	1
						MT	989,415	1
						DE	897,934	1
						SD	814,180	1
						AK	710,231	1
						ND	672,591	1
						VT	625,741	1
						WY	563,626	1
							17.8%	26
						Net change		**-26**

Table 2
States re-ordered in each category according to demographic/political characteristic and grouped by quartile (e.g., the 12 most heavily metropolitan states are grouped in 'high' and found to be allocated 37 senators after reapportionment). Net shift indicates proportionally how many new senators are allocated to the larger half of states in each set relative to those lost by the smaller half (e.g., the 25 most heavily metropolitan states would receive 36 more senators than they currently have).

Voting Records 2010, 111th Congress, Second Session. Scores are averaged across the two Senators. http://www.adaction.org/media/votingrecords/2010.pdf; DW nominate scores, Lewis et. al., 2017. Score are first dimension and averaged across the two Senators; Obama vote share 2012, Federal Elections Commission, https://transition.fec.gov/pubrec/fe2012/tables2012.xls; Party polarization, Shor-McCarty State Legislator Ideology Data 2015; ACU scores, The American Conservative Union, Federal Legislative Ratings, 2010, scores averaged across Senators, http://acuratings.conservative.org/acu-federal-legislative-ratings.

Reapportionment calculation.

For each state, we calculate:

$$A_{RS} = (A_{E1} * M_{H1}) + (A_{E2} * M_{H2}) \ldots + (A_{E50} * M_{H50})$$

where A_{RS} is the total Aye votes for a *CQ* key vote in the reapportioned Senate (0-100); A_{E1} is the number of Aye votes in a state under equal state representation (0-2); M_{H1} is the multiplier applied to the state using our qualified Hill-divisor method (0.5-5.5).

We then calculate the swing in vote from equal representation to reapportionment:
$$S_W = S_R - S_E$$

where S_W is swing, S_R is the number of yea votes under reapportionment and S_E is the number of yea votes under equal representation as reported in CQ key votes.