

The Electoral College Counts, and So Do the House and the Senate

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Does the U.S. system of elections reflect the will of the people? The question was brought into focus on Tuesday, November 7, 2000, when Americans went to the polls to elect the 43rd president of the United States, and the plurality winner nationwide, Al Gore, lost the election to George W. Bush. The 2000 U.S. presidential election was the first in over a century in which the Electoral College did not mirror the popular vote. If the idea that electoral outcomes directly reflect popular preference is a procedural hallmark of democratic governance, the 2000 U.S. presidential election failed to meet that mark. Whenever institutional arrangements other than direct election exist, the possibility for nondemocratic outcomes also exists. It is natural to ask of any particular set of arrangements: (1) how distorting is it compared to direct election? and (2) who benefits and who loses by virtue of the arrangements?

This paper will be organized as follows: We will first examine the 2000 election and observe which states were closely contested. We will discuss the idea of the pivotal state -- the state whose outcome tips the balance between the parties. We will then apply the pivotal actor concept to develop a definition of bias. We will then digress briefly to observe that presidential elections from 1984 to 2000 form a coherent grouping, and make sense to analyze together. Finally, we will consider the bias in the three elected institutions of U.S. government: the Electoral College, the House of Representatives, and the Senate. Each of these institutions will be analyzed from the perspective of voting in presidential elections. As expected, we find that the Senate, with its built-in favoritism to small states, is the most distorted on average of the three institutions. Perhaps surprising, however, is our finding that the House of Representatives has consistently shown more distortion than the Electoral College, and is scarcely less distorted than the Senate. The direction of distortion, for each of the institutions—the Senate, House, and the Electoral College—has been pro Republican, although not significantly so for the Electoral College, which is the least distorted selection mechanism in U.S. politics. The very visibility and clear violation of the popular vote in the 2000 election made clear that the Electoral College was an imperfect mechanism based on pure democratic standards. That it turns out to be the least imperfect institutional mechanism in recent elections is somewhat ironic.

Assessing Institutional Bias Using Presidential Elections

Understanding the basic implication of institutions for democratic control is an essential function of political science. Our goal in this paper is to assess the degree to which the major electoral mechanisms of the U.S. government are oriented to reflect majority preference. This work lies in an established tradition that has examined the relationship between votes and outcomes as a function of the

electoral units in which representatives are selected.¹

One key difference between this work and others is our decision to analyze each of the U.S. institutions through the behavior of voters in presidential elections. We focus on presidential elections because we are interested in how the basic underlying institutional structures of U.S. electoral politics -- the Electoral College, the set of Congressional Districts that elect the House of Representatives, and the states themselves as selectors of the Senate -- are likely to influence outcomes compared to a direct national level vote. This task requires examining the various electoral units in a context in which they can be systematically compared.

Only presidential elections reflect the U.S. voting population's assessment of a common set of candidates across voting districts. In recent presidential elections there is one candidate representing the national Democratic Party and one representing the national Republican Party. Regardless of the state or Congressional District in which a person resides, that person is observing the same basic election. Thus the outcomes across states or Congressional Districts are inherently comparable.² Further, from a representational standpoint they are judgments on the national agendas of both major parties.

The situation is quite different in more local elections. For example, consider a rather conservative state or House district in which the Democratic candidate presents a platform considerably more conservative than the typical Democrat. The effect might be to make the election more competitive in the state or district. That, however, would mask the intrinsic nature of the state or district as part of the national representation system. By orienting local competition to local situation, those competitions are less suited to revealing where the unit is located in the national debate.

The Presidency, the House of Representatives, and the Senate all make decisions for the United States as a whole. By observing the behavior of the three electoral systems in the common setting of presidential elections we have a natural means to assess how the particular set of electoral units used in the United States tends to shape representation.

Two additional benefits accrue from focusing on Presidential elections. First, Congressional elections in both the House and Senate, but particularly in the House, often are very unequal. A candidate by virtue of incumbency, or for other reasons, frequently has such a disproportionate

¹ For the Electoral College see, for example, Kallenbach (1960); Nelson (1974); Merrill (1978); Rabinowitz and Macdonald (1986); and Grofman, Brunell and Campagna (1997). For the implication of votes for seats and the biases that might arise through redistricting decisions a very partial list includes Erikson (1972); Tufte (1973); Niemi and Deegan (1978); Grofman (1983); King and Browning (1987); King (1989); Gelman and King (1994a); Gelman and King (1994b); and Cox and Katz (1999).

² This is not to argue that voters see identical advertising or there are no state or congressional district variations in presidential election campaigns. It is, however, to argue that presidential races are much closer to being identical across constituencies than any other race or set of races.

advantage in terms of resources that the election is a meaningless competition (c.f. Jacobson 2001). While the advantages and disadvantages that accumulate for each party through noncompetitive elections are likely to somewhat cancel out over a large number of contests, they are unlikely to cancel out entirely and are sure to distort the description of particular electoral units. Thus, not only are Presidential elections theoretically more appropriate to our task, they are also less subject to adulterated competition. Second, people tend to vote more in Presidential elections than any other elections in the U.S. Since our goal is to observe the impact of institutional design on representing national will, it makes sense to do so in the electoral setting which engages the largest possible share of the electorate.

Defining the Pivotal Actor, Pivotal Percentage, and Bias

We begin by considering the Electoral College. Table 1 shows presidential vote by state with states ordered from most Democratic to most Republican in the 2000 election. There is a running total of Electoral College votes in the cumulative columns, one cumulating from the most Democratic state, Washington D.C., to the most Republican, Utah, the other from Utah to D.C.. We have used normal type to show the cumulative vote that each party actually received and smaller italic type to show the cumulation had the party continued to add states. Notice that Florida, which is shaded and in bold face, is the state determining the winner. When the Democratic cumulation includes Florida, Gore wins; when the Republican cumulation (going from the bottom up) includes Florida, Bush wins.³

-- Table 1 about here --

In the 2000 election Florida was the closest state to the 50-50 mark, but that was not what made Florida pivotal. For example, suppose that Wisconsin and Florida had shifted position. We show in Table 2 just the 7 states around the pivot with vote percentage in Florida now what Wisconsin's was, and vice versa. The cumulation through Iowa is just as it was in Table 1. Notice that Florida with Wisconsin's vote now falls in the Democratic camp and that the Democrats win. This is true even with Florida moved up two states in the Democratic direction. In this particular ordering of states, the outcome in Wisconsin and New Mexico was irrelevant. Florida's pivotal role did not depend on its being closest to the 50-50 point—it was being in the decisive position in the sequence. We define the *pivotal percentage* as the percentage two-party vote in the pivotal state for the candidate who won the popular vote. In this case it was 49.995, Gore's percentage of the two-party vote in Florida.

-- Table 2 about here --

While clearly having a large number of electoral votes facilitates being at the pivot. It is by no means necessary. For example, had New Hampshire been Democratic jumping past Florida in the

³ The idea of the pivotal player is not new to political science, see, for example, Mann and Shapley (1964) and Rabinowitz and Macdonald (1986).

Democratic-to-Republican sequence in Table 1, then New Hampshire would have been in the pivotal position with just four electoral votes. In presidential elections in which electoral votes are awarded based on the winner of state elections, the pivotal state is always the state, when the states are ordered from most Democratic to most Republican or most Republican to most Democratic, that puts the winning candidate over the top.

Given there is an even number of electors (538), it is possible that no single state is in the pivot. In the case where one state puts a candidate to 269 (half of the 538 Electoral College votes) going in one direction while another state puts the opposing candidate to 269 going in the opposite direction, we have two states sharing the pivotal role. That would have happened in 2000 had Florida been Democrat and Wisconsin, Iowa and New Mexico been Republican. In cases of ties the pivotal percentage is based on the average percentage vote for the popular vote winner in those two states.

The idea of a pivotal state is very similar to the idea of the median voter in elections. The median voter idea is frequently presented in left-right or liberal-conservative terms, and we realize that the voter in the median position with an equal number of voters on either side of her controls the outcome. The idea of a pivotal player can be viewed as just an extension of the median player idea to weighted voting situations.

In the case of the House and Senate, the pivotal player and median player are identical. Each congressional district has just one vote. The pivotal district is simply the 218th (exactly in the middle of the 435-seat House) district when the districts are ordered from Democratic to Republican or Republican to Democratic. If the median (218th) district goes to the Democrats, the Democrats compose the majority in the House; if it goes Republican, the Republicans compose the majority.⁴ In the Senate, with an even number of Senators per state and an even number of 50 states, no pure median (pivotal) state exists. Rather the pivotal percentage is the average of the percentage vote for the popular winner in the 25th and 26th state, once the states are ordered.

The pivotal percentage provides a natural point for determining the degree of bias produced by a particular electoral mechanism. The more the pivotal percentage deviates from the overall election percentage, the more the controlling actor differs from the electorate as a whole, and the more distorting the mechanism. In the 2000 election, Florida's Democratic percentage of the two party vote was 49.995, the national percentage was 50.266, and the bias in the election was therefore $49.995 - 50.266 = -0.271$. Thus the net bias associated with the Electoral College was 0.271% in the Republican direction.

Our introduction of the pivot as a means for assessing bias in institutional arrangements to our knowledge is new, and we feel it represents an important addition to more standard approaches. These

⁴ Clearly independents can and do win seats, but we assume for purposes of this discussion that seats fall to one or the other major party. This is a common assumption in studies of district effects.

have either been statistical in nature, or relied on assumptions of uniform swings. The measure we offer is well defined in any particular election and is substantively meaningful. The pivotal actor controls the outcome and thus is the natural center of attention in assessing bias. Hence our approach differs in two ways from the existing literature: our analytic work focuses on the behavior of voters in presidential elections, and our measure of bias is centered on the disparity between the national percentage and the pivotal actor. We share with others a focus on the two-party vote.

Adjusted percentages. In 2000, however, there were more than two candidates on the ballot in most states, and one of those candidates, Ralph Nader, ran fairly well -- collecting more than 3 percent of the vote nationwide. Given Nader's political agenda, it is quite likely he was winning more potential Gore votes than Bush votes. Further, Nader ran quite differently across the country. He garnered over 4% of the vote in every state that touches the Pacific Ocean and received less than 1% of the vote across the Deep South. If our interest is the basic structure of the two-party vote in the United States, failure to integrate the Nader voters into the analysis is likely to lead to distorting the basic voting tendencies of states. Similar distortions would occur if we ignore relatively successful third party candidates in other years. Hence the various analyses we report will divide third party votes based on how third party voters evaluated the two major party candidates in pre-election NES interviews when that third party received over 1% of the national vote.⁵ We will, however, report relevant results that are based strictly on major party vote to forestall potential concerns that the findings are dependent on the adjustments we make. Our results are consistent across approaches, but we feel the adjusted percentages are more meaningful.

State voting in the 2000 election using adjusted vote percentages appears in Table 3. Consistent with findings based on the NES election surveys the Nader vote was split 59.5% to Gore, 40.5% to Bush. With the Nader vote split between the parties, Gore is now the winner both in Florida and nationwide. Florida is the only state we find changing hands as a result of the Nader candidacy, and it remains the pivot when states are ordered using these adjusted vote totals. The level of bias imposed by the Electoral College as an institution is only slightly changed from 0.275 to 0.371, still in the Republican direction.

-- Table 3 about here --

The adjusted percentages are somewhat more representative of a generic Bush-Gore election in 2000 than the ones with the Nader vote ignored. We have added an additional column showing electoral vote based on the updated census. The new census will determine state electoral votes in the 2004 and 2008 elections. Recalculating electoral votes based on the new census still leaves Florida in

⁵ The vote is distributed by dividing the third party voters into the % who evaluated the Democratic candidate more favorably, the % that favored the Republican candidate, and the % that gave tied evaluations to the two candidates. The distributed % Democrat was the Democratic candidate % plus one-half the tied %, and the % Republican was the mirror image of that.

the pivot; however, there is net movement of the Electoral College vote in the direction of the Republican Party, as the set of states that favored Bush were net gainers in the census.

The Structure of Presidential Elections from 1960 to 2000

We will now take a short digression from our analysis of electoral institutions to consider the structure of elections from 1960 to 2000. The digression is necessary as elections can be radically different, and it is more meaningful to consider as a single grouping those elections that have a similar vote structure. Figure 1 shows a plot of the elections from 1960 to 2000 based on a factor analysis of those elections, with the states as cases.

-- Figure 1 about here --

Notice that there is good deal of variation in how states voted across the 1960-2000 time frame. Anchoring one end is the 1976 Ford-Carter election, which was ideologically very low key and featured a moderate Southerner, Jimmy Carter, running for the Democrats against a moderate Midwesterner, Gerald Ford. Carter ran relatively well in the South and less well in the Northeast and Midwest, compared to other Democrats. Anchoring the other end is the 1972 election, which was fervently ideological. The 1972 and 1976 elections are so distinct based on the behavior of the states that they are virtually independent. Knowing how a state voted in one tells us virtually nothing about how the state voted in the other.

In contrast the 1984-2000 elections are tightly clustered and seem to form a relatively homogenous unit. They also comprise the five most recent presidential elections. We will therefore focus our analysis of institutional behavior on these five elections.

Bias in the Electoral College, House, and Senate

Now let us consider the level of bias in each of the institutions over this set of elections. Table 4 shows the level of bias in each election for each institution. The Electoral College is clearly the least distorted. In none of the five elections was the pivotal state as far from the national vote percentage as the pivotal Senatorial state or the pivotal Congressional District. Further, in one instance, 1992, the Electoral College favored the Democrats rather than the Republicans. Based on the five elections the mean percentage bias of the Electoral College was 0.09 in the Republican direction. This is far less than a standard deviation, and is even less than the standard error of the mean, if we consider the elections to be from a homogeneous sample. Based on its behavior there is no statistical basis whatsoever to argue the Electoral College is systematically biased to favor either party, and in absolute terms is far less biased, based on any criterion, than either the House of Representatives or the Senate as a means of

reflecting the national will.⁶

-- Table 4 about here --

To get a better feel for the level of bias in House elections, Table 5 shows the set of Congressional districts whose vote falls between the adjusted national percentage for Gore, 50.523, and the pivotal Congressional District, in this case Texas District 10 in which Gore received 49.315 percent of the vote. Notice that 13 districts in addition to the Texas's 10th fall in this range. In substantive terms, if the election for House members had replicated presidential vote, in an election that was very slightly in the Democratic direction based on national vote, the Republicans would have controlled the pivot -- thus the House of Representatives.

-- Table 5 about here --

The number of seats falling between the pivot and the national average is a secondary measure of bias. All things being equal, the pivotal district should exactly match the national percentage. When that occurs an election is arguably an accurate reflection of popular will. The greater the number of districts between the actual pivot and the national percentage, the more inherently distorted the election from a unit perspective.

Table 6 redisplay the state level data now with a marking between the 25th and 26th states to reflect competition for the Senate. In this case the pivot percentage is the average of the percentage vote in the two states, Nevada and Tennessee, that surround the pivot. Note that there are three states, Missouri, New Hampshire, and Florida, that lie between the pivotal percentage and the national percentage, with the pivotal percentage distinctly more favorable to the Republican Party than the national percentage. This result represents the fact that the smaller states as an aggregate tend to be somewhat more Republican than the larger states. Hence when states are each given equal votes, the distortion compared to the national percentage favors the Republicans.

-- Table 6 about here --

Table 7 summarizes the seat bias for the House and Senate for each of the 1984 to 2000 elections. Once again the pattern is consistently pro-Republican. On average there is a net of slightly more than 20 seats between the pivotal district and the national average in the House and slightly more than 5 seats in the Senate. This is roughly a 5% distortion in both chambers.

-- Table 7 about here --

Sources of bias. There are several possible sources of bias. The most obvious is that

⁶ We are indebted to *Congressional Quarterly* and the ICPSR and NES for data we used in this project. We owe a special debt to Greg Giroux without whom this paper would not have been written.

Washington D.C. is represented in the national presidential vote, but does not elect representatives to the House or Senators. When the vote of residents from D.C. are entirely eliminated from consideration, the national percentages shift very modestly in a more Republican direction, but not nearly enough to account for the distortion we observe in either the House or Senate. The distortion that exists is therefore primarily caused by other sources. The most likely source of distortion is the shaping of Congressional districts, and the relatively different preferences of large and small states, both creating something of a national gerrymander that favors the Republican Party.

Conclusion

Particularly striking are two features of our results. First, the Electoral College shows no significant distortion in favor of either party, and its absolute level of bias is not pronounced in any recent election. Second, both the House and Senate do show significant bias, and the House shows almost as much bias as the Senate.

In considering the Electoral College, we have not considered the voting problems in Florida in the 2000 election. Given the already small distortion in the 2000 election, had all the votes been counted in Florida, it seems likely that the Electoral College would have been even less distorted, and the distortion might well have favored the Democratic rather than the Republican Party. The fact that the 2000 election was the first in over a century to misrepresent the popular vote seems a more accurate reflection of the lack of distortion in the Electoral College, than the fact that in the close 2000 election the Electoral College produced the Awrong@winner.

That distortion should exist in the Senate is not surprising. In any system where voting strength is based on something other than population size, some distortion should be expected. The House, however, is different. On the face of it, one would expect that the House should be a good deal more representative of the general popular will than the Senate. The fact that the set of representatives in the House is based on elections in each of 435 constituencies, rather than on a national vote, however, presents a framework in which distortion is possible. The Senate on average does show slightly more bias than the House, but the difference between the two chambers is statistically insignificant.

Does the bias matter? To the extent electoral mechanisms are expected to reflect popular will, significant distortion does matter. Each electoral unit creates an environment in which individuals compete for office. If the set of units in which candidates compete is tilted to favor a particular set of ideas, it is likely to create elected bodies that do not accurately represent the preferences of the electorate.

There is also a practical political message in these results. Some state legislatures have considered the idea of moving to systems similar to those in Maine and Nebraska in which the state vote selects two electors in the Electoral College and a distinct elector is selected in each Congressional district. If adopted nationally, such a system would be substantially more distorted than an Electoral

College in which states follow a unit rule. The change would distinctly favor the Republican Party. Our calculations -- based on the 1984-2000 election set show that such a system would on average have approximately a 1.3 percentage bias and a 27 electoral vote bias in favor of the Republican Party, far greater than the current Electoral College selected with a unit rule. While critics of the Electoral College feel that there is something better out there, no alternative within the current Constitution is apparent. If the goal is to have the presidential winner be the candidate who won the most votes, any change short of direct popular election is likely to make the situation worse rather than better.

References:

- Cox, Gary W. and Jonathan N. Katz. The Reapportionment Revolution and Bias in U. S. Congressional Elections. *American Journal of Political Science*, Vol. 43, No. 3. (Jul., 1999), pp. 812-841.
- Erikson, Robert S. Malapportionment, Gerrymandering, and Party Fortunes in Congressional Elections. *The American Political Science Review*, Vol. 66, No. 4. (Dec., 1972), pp. 1234-1245.
- Gelman, Andrew and Gary King. A Unified Method of Evaluating Electoral Systems and Redistricting Plans. *American Journal of Political Science*, Vol. 38, No. 2. (May, 1994), pp. 514-554.
- Gelman, Andrew and Gary King. Enhancing Democracy Through Legislative Redistricting. *The American Political Science Review*, Vol. 88, No. 3. (Sep., 1994), pp. 541-559.
- Grofman, Bernard, Thomas Brunell, and Janet Campagna. Distinguishing between the Effects of Swing Ratio and Bias on Outcomes in the U.S. Electoral College, 1900-1992. *Electoral Studies*. Vol. 16, No. 4 (Dec. 1997), pp. 471-487.
- Grofman, Bernard. Measures of Bias and Proportionality in Seats-Votes Relationships. *Political Methodology*. Vol. 9, No. 3. (1983), pp. 295-327.
- Jacobson, Gary C. 2001. *The Politics of Congressional Elections*. New York: Longman.
- Kallenbach, Joseph E. Our Electoral College Gerrymander. *Midwest Journal of Political Science*, Vol. 4, No. 2. (May, 1960), pp. 162-191.
- King, Gary and Robert X Browning. Democratic Representation and Partisan Bias in Congressional Elections. *The American Political Science Review*, Vol. 81, No. 4. (Dec., 1987), pp. 1251-1273.
- King, Gary. Representation through Legislative Redistricting: A Stochastic Model. *American Journal of Political Science*, Vol. 33, No. 4. (Nov., 1989), pp. 787-824.
- Mann, Irwin and Lloyd S. Shapley. 1960. Values of Large Games, IV: Evaluating the Electoral College by Monte Carlo Techniques. Rand Memorandum, RM-2651.
- Mann, Irwin and Lloyd S. Shapley. 1962. Values of Large Games, VI: Evaluating the Electoral College Exactly. Rand Memorandum, RM-3158.

Merrill, Samuel III. Citizen Voting Power Under the Electoral College: A Stochastic Model Based on State Voting Patterns. *SIAM Journal on Applied Mathematics*, Vol. 34, No. 2. (Mar., 1978), pp. 376-390.

Nelson, Michael C. Partisan Bias in the Electoral College. *The Journal of Politics*, Vol. 36, No. 4. (Nov., 1974), pp. 1033-1048.

Niemi, Richard G. and John Deegan, Jr. A Theory of Political Districting. *The American Political Science Review*, Vol. 72, No. 4. (Dec., 1978), pp. 1304-1323.

Rabinowitz, George and Stuart Elaine Macdonald. The Power of the States in U.S. Presidential Elections. *The American Political Science Review*, Vol. 80, No. 1. (Mar., 1986), pp. 65-87.

Tufte, Edward R. The Relationship between Seats and Votes in Two-Party Systems. *The American Political Science Review*, Vol. 67, No. 2. (Jun., 1973), pp. 540-554.

Figure 1
Principal Component Analysis
1960-2000 Elections

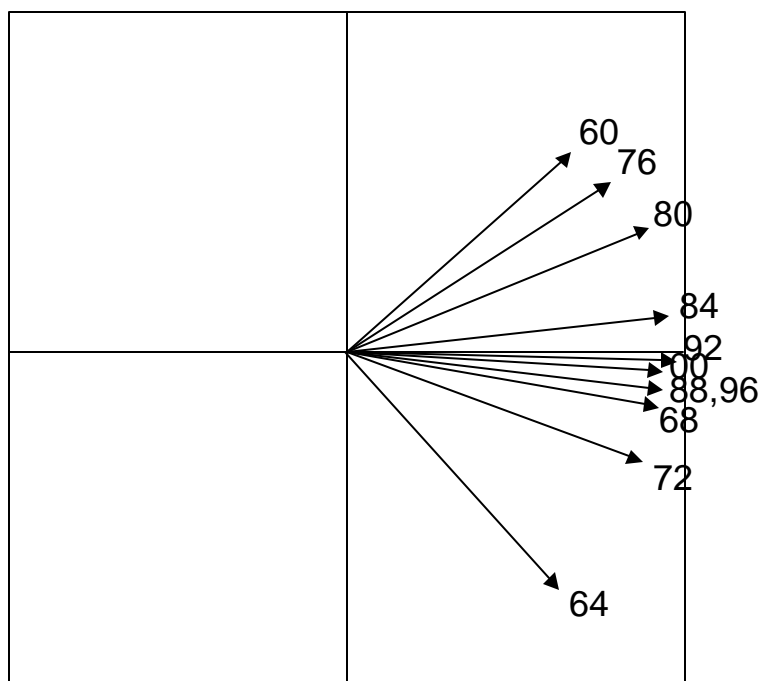


Table 1: Illustration of Pivotal Concept in 2000 Election

States	Unadjusted Dem two-party vote	% from Nat Aver (50.266)	ElecVote	Cum Dem	Cum Rep
DC	90.488	40.222	3	3	538
Rhode Island	65.649	15.383	4	7	535
Massachusetts	64.789	14.523	12	19	531
New York	63.088	12.822	33	52	519
Hawaii	59.827	9.561	4	56	486
Connecticut	59.256	8.990	8	64	482
Maryland	58.432	8.166	10	74	474
New Jersey	58.211	7.945	15	89	464
Delaware	56.740	6.474	3	92	449
California	56.203	5.937	54	146	446
Illinois	56.180	5.914	22	168	392
Vermont	55.440	5.174	3	171	370
Washington	52.945	2.679	11	182	367
Maine	52.748	2.482	4	186	356
Michigan	52.635	2.369	18	204	352
Pennsylvania	52.148	1.882	23	227	334
Minnesota	51.286	1.020	10	237	311
Oregon	50.236	-0.030	7	244	301
Iowa	50.163	-0.103	7	251	294
Wisconsin	50.115	-0.151	11	262	287
New Mexico	50.032	-0.234	5	267	276
Florida	49.995	-0.271	25	292	271
New Hampshire	49.332	-0.934	4	296	246
Missouri	48.288	-1.978	11	307	242
Ohio	48.161	-2.105	21	328	231
Nevada	48.143	-2.123	4	332	210
Tennessee	48.037	-2.229	11	343	206
Arkansas	47.199	-3.067	6	349	195
West Virginia	46.758	-3.508	5	354	189
Arizona	46.717	-3.549	8	362	184
Louisiana	46.061	-4.205	9	371	176
Virginia	45.853	-4.413	13	384	167
Colorado	45.514	-4.752	8	392	154
Georgia	44.016	-6.250	13	405	146
North Carolina	43.536	-6.730	14	419	133
Alabama	42.393	-7.873	9	428	119
Kentucky	42.272	-7.994	8	436	110
Indiana	41.995	-8.271	12	448	102
South Carolina	41.838	-8.428	8	456	90
Mississippi	41.395	-8.872	7	463	82
Kansas	39.083	-11.183	6	469	75
Texas	39.044	-11.222	32	501	69
Oklahoma	38.919	-11.347	8	509	37
South Dakota	38.385	-11.881	3	512	29
Montana	36.344	-13.922	3	515	26
North Dakota	35.273	-14.993	3	518	23
Nebraska	34.821	-15.446	5	523	20
Alaska	32.063	-18.203	3	526	15
Idaho	29.152	-21.115	4	530	12
Wyoming	29.018	-21.248	3	533	8
Utah	28.274	-21.992	5	538	5

Table 2:
Example Switching Florida and Wisconsin's Vote

States	2000 Dem. Vote	% from Nat Aver (50.266)	ElecVote	Cum Dem	Cum Rep
Iowa	50.163	-0.103	7	251	<i>294</i>
Florida	50.115	-0.151	25	276	287
New Mexico	50.032	-0.234	5	281	<i>262</i>
Wisconsin	49.995	-0.271	11	<i>292</i>	<i>257</i>
New Hampshire	49.332	-0.934	4	<i>296</i>	<i>246</i>
Missouri	48.288	-1.978	11	<i>307</i>	<i>242</i>
Ohio	48.161	-2.105	21	<i>328</i>	<i>231</i>

Table 3: 2000 Adjusted Pivotal State Rankings

States	Dem. Vote	% from 50.523	ElecVote 2000	CumVote 2000	ElecVote 2004	CumVote 2004
DC	88.854	38.331	3	3	3	3
Rhode Island	65.269	14.746	4	7	4	7
Massachusetts	64.445	13.922	12	19	12	19
New York	62.958	12.435	33	52	31	50
Hawaii	59.808	9.285	4	56	4	54
Connecticut	59.267	8.743	8	64	7	61
Maryland	58.461	7.938	10	74	10	71
New Jersey	58.250	7.727	15	89	15	86
Delaware	56.810	6.287	3	92	3	89
California	56.330	5.807	54	146	55	144
Illinois	56.253	5.730	22	168	21	165
Vermont	55.726	5.203	3	171	3	168
Washington	53.219	2.696	11	182	11	179
Maine	53.137	2.614	4	186	4	183
Michigan	52.772	2.249	18	204	17	200
Pennsylvania	52.305	1.781	23	227	21	221
Minnesota	51.719	1.196	10	237	10	231
Oregon	50.710	0.187	7	244	7	238
# of states between pivot and national average (50.523) = 3						
Wisconsin	50.458	-0.065	11	255	10	248
Iowa	50.373	-0.150	7	262	7	255
New Mexico	50.370	-0.153	5	267	5	260
Florida	50.152	-0.371	25	292	27	287
New Hampshire	49.734	-0.790	4	296	4	291
Missouri	48.473	-2.051	11	307	11	302
Ohio	48.448	-2.075	21	328	20	322
Nevada	48.429	-2.094	4	332	5	327
Tennessee	48.147	-2.376	11	343	11	338
Arkansas	47.381	-3.142	6	349	6	344
Arizona	47.103	-3.420	8	357	10	354
West Virginia	46.973	-3.550	5	362	5	359
Colorado	46.260	-4.263	8	370	9	368
Louisiana	46.219	-4.304	9	379	9	377
Virginia	46.151	-4.372	13	392	13	390
Georgia	44.235	-6.288	13	405	15	405
North Carolina	43.536	-6.987	14	419	15	420
Alabama	42.583	-7.940	9	428	9	429
Kentucky	42.533	-7.991	8	436	8	437
Indiana	42.145	-8.378	12	448	11	448
South Carolina	42.099	-8.424	8	456	8	456
Mississippi	41.544	-8.979	7	463	6	462
Kansas	39.780	-10.744	6	469	6	468
Texas	39.487	-11.036	32	501	34	502
Oklahoma	38.919	-11.604	8	509	7	509
South Dakota	38.385	-12.138	3	512	3	512
Montana	37.752	-12.771	3	515	3	515
North Dakota	36.095	-14.429	3	518	3	518
Nebraska	35.698	-14.825	5	523	5	523
Alaska	34.930	-15.594	3	526	3	526
Idaho	29.916	-20.607	4	530	4	530
Utah	29.759	-20.764	5	535	5	535
Wyoming	29.679	-20.844	3	538	3	538

**Table 4:
Bias of Electoral Institutions 1984-2000***

Adjusted Percentages Where Relevant (92, 96, 00)			
	ElecColl	House	Senate
1984	-0.370	-1.448	-1.858
1988	-0.077	-1.284	-1.911
1992	-0.196	-1.042	-0.907
1996	0.496	-0.893	-0.913
2000	-0.371	-1.208	-2.235
Mean	-0.104	-1.175	-1.565
Std Dev	0.358	0.215	0.615
Std Err	0.160	0.096	0.275
t-value	-0.649	-12.228	-5.691
Prob value	0.5517	0.0003	0.0047
Unadjusted Percentages			
	ElecColl	House	Senate
1984	-0.370	-1.448	-1.858
1988	-0.077	-1.284	-1.911
1992	-0.653	-1.099	-1.222
1996	0.425	-1.138	-1.165
2000	-0.271	-1.332	-2.176
Mean	-0.189	-1.260	-1.666
Std Dev	0.401	0.143	0.449
Std Err	0.179	0.064	0.201
t-value	-1.055	-19.722	-8.304
Prob value	0.3509	0.0000	0.0011

Note: Negative bias favors Republicans and positive bias favors Democrats

Table 5: House Districts Close to the Pivot in 2000

State (CD)	Bush Adj%	Gore Adj%	% from Adjusted Nat Aver (50.523)	District Position
Wisconsin (District 7)	48.866	51.134	0.611	234
California (District 23)	48.997	51.003	0.480	233
New Hampshire (District 2)	49.222	50.778	0.255	232
# of districts between pivot and national average (50.523) = 13				
Texas (District 27)	49.570	50.430	-0.093	231
New York (District 24)	49.591	50.409	-0.114	230
Michigan (District 11)	49.653	50.347	-0.176	229
Michigan (District 10)	49.982	50.018	-0.506	228
Washington (District 3)	49.992	50.008	-0.515	227
Virginia (District 4)	50.010	49.990	-0.533	226
Tennessee (District 8)	50.101	49.899	-0.624	225
Florida (District 2)	50.154	49.846	-0.677	224
Pennsylvania (District 21)	50.224	49.776	-0.747	223
Minnesota (District 1)	50.386	49.614	-0.909	222
Iowa (District 3)	50.500	49.500	-1.023	221
Minnesota (District 6)	50.574	49.426	-1.097	220
Arkansas (District 2)	50.582	49.418	-1.106	219
Texas (District 10)	50.685	49.315	-1.208	218
Oregon (District 5)	50.822	49.178	-1.345	217
Iowa (District 4)	50.864	49.136	-1.387	216
Arizona (District 5)	50.872	49.128	-1.395	215
California (District 44)	50.990	49.010	-1.514	214
Florida (District 7)	51.002	48.998	-1.525	213
Florida (District 8)	51.185	48.815	-1.708	212
New Hampshire (District 1)	51.277	48.723	-1.800	211
California (District 11)	51.288	48.712	-1.812	210
Pennsylvania (District 10)	51.403	48.597	-1.926	209
Pennsylvania (District 4)	51.492	48.508	-2.015	208
Ohio (District 13)	51.546	48.454	-2.069	207
California (District 22)	51.587	48.413	-2.110	206
California (District 41)	51.631	48.369	-2.154	205
Minnesota (District 3)	51.876	48.124	-2.399	204
Oregon (District 4)	52.202	47.798	-2.725	203
Wisconsin (District 4)	52.210	47.790	-2.734	202
Ohio (District 12)	52.379	47.621	-2.902	201

Table 6: Senate--Adjusted vote by states 2000

States	Adj.Dem. Vote	% from Adjusted Nat Aver (50.523)	Rank State
Rhode Island	65.269	14.746	50
Massachusetts	64.445	13.922	49
New York	62.958	12.435	48
Hawaii	59.808	9.285	47
Connecticut	59.267	8.743	46
Maryland	58.461	7.938	45
New Jersey	58.250	7.727	44
Delaware	56.810	6.287	43
California	56.330	5.807	42
Illinois	56.253	5.730	41
Vermont	55.726	5.203	40
Washington	53.219	2.696	39
Maine	53.137	2.614	38
Michigan	52.772	2.249	37
Pennsylvania	52.305	1.781	36
Minnesota	51.719	1.196	35
Oregon	50.710	0.187	34
# of States between pivot and national average = 8			
Wisconsin	50.458	-0.065	33
Iowa	50.373	-0.150	32
New Mexico	50.370	-0.153	31
Florida	50.152	-0.371	30
New Hampshire	49.734	-0.790	29
Missouri	48.473	-2.051	28
Ohio	48.448	-2.075	27
Nevada	48.429	-2.094	26
Actual Pivot	48.288	-2.235	
Tennessee	48.147	-2.376	25
Arkansas	47.381	-3.142	24
Arizona	47.103	-3.420	23
West Virginia	46.973	-3.550	22
Colorado	46.260	-4.263	21
Louisiana	46.219	-4.304	20
Virginia	46.151	-4.372	19
Georgia	44.235	-6.288	18
North Carolina	43.536	-6.987	17
Alabama	42.583	-7.940	16
Kentucky	42.533	-7.991	15
Indiana	42.145	-8.378	14
South Carolina	42.099	-8.424	13
Mississippi	41.544	-8.979	12
Kansas	39.780	-10.744	11
Texas	39.487	-11.036	10
Oklahoma	38.919	-11.604	9
South Dakota	38.385	-12.138	8
Montana	37.752	-12.771	7
North Dakota	36.095	-14.429	6
Nebraska	35.698	-14.825	5
Alaska	34.930	-15.594	4
Idaho	29.916	-20.607	3
Utah	29.759	-20.764	2
Wyoming	29.679	-20.844	1

**Table 7:
Seat Bias 1984-2000***

Adjusted Percentages Where Relevant (92, 96, 00)		
	House	Senate
1984	28	9
1988	22	5
1992	23	4
1996	18	2
2000	13	8
Mean	20.8	5.6
Std Dev	5.630	2.881
Std Err	2.518	1.288
t-value	8.261	4.346
Prob value	0.001	0.012
Unadjusted Percentages		
	House	Senate
1984	28	9
1988	22	5
1992	21	4
1996	18	3
2000	12	9
Mean	20.2	6.0
Std Dev	5.848	2.828
Std Err	2.615	1.265
t-value	7.724	4.743
Prob value	0.002	0.009

Note: Bias favors Republicans in every case.